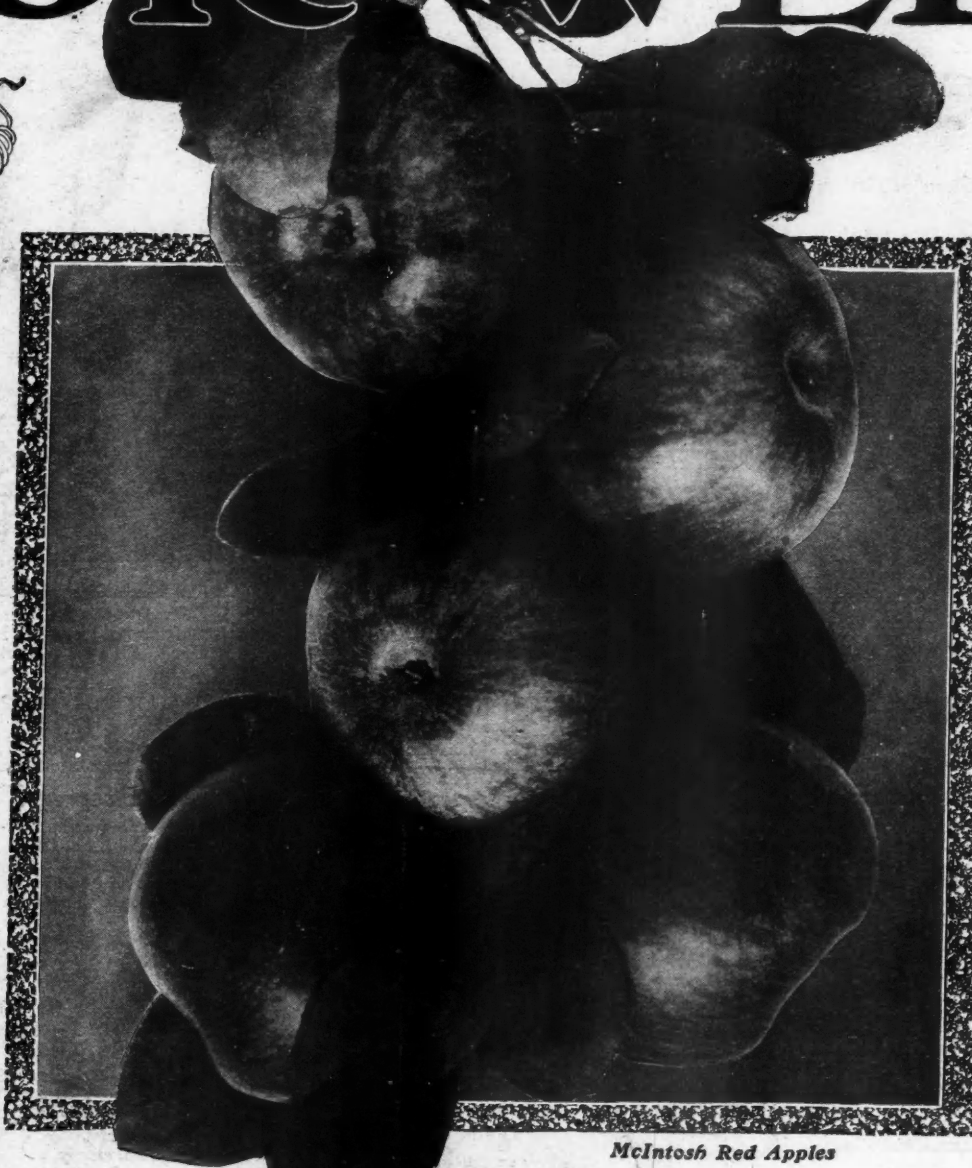
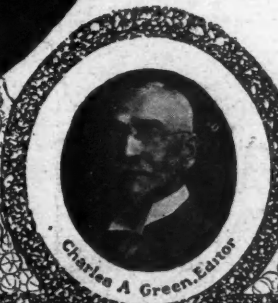


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134 - - Stark City, Missouri



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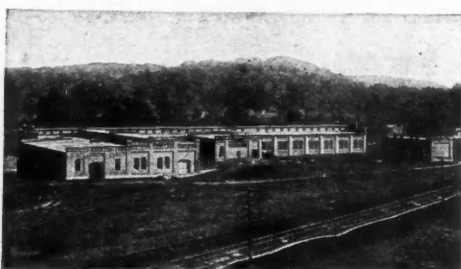
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# Equipment for Spraying

With other conditions favorable, the orchardist will not be able to secure satisfactory results in spraying unless he uses an efficient spraying outfit. While there has been a notable improvement in the character of spraying machinery used by orchardists during the last few years, there are yet many outfits in use which greatly handicap the work. At the present time there are on the market a large series of makes of spray pumps, many of which are quite efficient for the purpose for which they are designed, and the orchardist should not be satisfied with any but the best.

The barrel type of spray pump is serviceable in small to medium sized orchards, and when properly fitted with hose of sufficient length, a good agitator, and good nozzle, very effective work may be done. The pump, according to design, may be fitted to the end or side of the ordinary 50-gallon kerosene or similar barrel and may be mounted on a sled or wheels, or preferably placed in a cart or wagon. One man is required to pump and one or two men to handle the nozzles, depending on whether one or two leads of hose are used. A good barrel pump should supply two leads of hose, each with double nozzles. Tank outfits are mostly used in the larger orchards, but are very desirable for small orchardist as well. These outfits consist of rectangular or half-round tanks, flat on top, holding from 100 to 300 gallons of the spray mixture, fitted to the wagon in place of the wagon bed. Some growers use a 100 to 200 gallon tank placed on one end of the wagon. The barrel type of pump may be used on these tanks, but for this purpose it is better to use the larger tank pumps with suction hose. The hole in the top of the tank should be covered with a close-fitting lid to keep out leaves, twigs, and other trash, which would clog the pump and nozzles.

However, in large commercial orchards, power sprayers are mostly used, such as gasoline, compressed air, etc. With such outfits a much higher pressure may be maintained than is possible with hand pumps, giving a fine spray, which may be driven to all parts of the tree. Sufficient power will be furnished to supply several leads of hose and the spraying may be done rapidly, which is very important, especially in regions where suitable days for spraying are not frequent. The usual defect in spraying outfits is that the hose is not of sufficient length. Each lead of hose should be from 25 to 35 feet long, and provided with an 8-foot to 12-foot bamboo extension rod. This length of hose will permit the complete spraying of a tree before leaving it, insuring more thorough work than if only one side is sprayed at a time, and the amount of driving necessary will be reduced by one-half.

The nozzle, of which there are many kinds on the market, is a very essential part of the spraying outfit. Whereas a few years ago the nozzles available were far from satisfactory for orchard spraying, there are now to be obtained good nozzles for the purpose. For general spraying the Vermorel or eddy chamber type of nozzle, of which there are various modifications, is best. These nozzles give a spray of different degrees of fineness, depending upon the size of the opening of the cap used. In the spray application given immediately after the falling of the petals, especially to lodge poison in the calyx cups for the control of the codling moth, a cap with a large opening is used by many orchardists, and some fruit growers, especially in portions of the West, use at this time a still coarser spray, as that from the "Bordeaux" or similar nozzles. Information on this point as obtained by the Department of Agriculture under humid conditions indicates that there is no advantage in using so coarse a spray, such as is produced by Bordeaux nozzles, especially since a much larger amount of spray is required, and greater injury may result.

In spraying high trees, some form of elevated platform should be constructed on the wagon, on which one of the men holding the nozzles may stand to spray the higher parts of the tree, the other men spraying from the ground as high as may be reached and overlapping the work of the men on the tower.

In many commercial orchards more time is consumed in driving to and from the water supply than in actually applying

the spray. This can be remedied by the use of a supply tank which will hold 200 to 300 gallons. One man should be able to prepare the mixtures and deliver them to the sprayers in the orchard, thus keeping the outfit constantly in operation. The mixture may be quickly transferred from the supply tank by means of a rotary pump attached to the engines or by other tank-filling devices.

## SPRAYING FOR BETTER AND MORE FRUIT

### A Demonstration That Convinced the Neighborhood

WE must expect to spray if we hope to have first-class fruit. "What else can we expect," asks a practical entomologist, "so long as our birds, toads, snakes and other destroyers of insects and their eggs are being indiscriminately destroyed?" This mistake has already been carried to an alarming extent; and while we are striving

when others had absolutely none,—surely this was enough reward!

### Spraying Peach Trees

More, the foliage of peach trees previously affected with leaf curl and inclined to turn yellow and drop before the end of the summer, remained green and healthy to the end of the season. On both peach and other trees there was thrift, promise of renewed energy. And even though the orchardist did find some of the oyster-shell, scurvy, and Forbes scale, prevalent in the neighborhood, an appreciable advantage has been gained, and the trees will be in a much better condition for a more thorough work the coming season. The lesson has been learned that for control of the scale and blister mite the earlier work must be done, just as the leafbuds begin to show the first bit of green. Then the lime-sulphur application can be used in its greater strength, with no foliage to obstruct the force of the spray.

This lime-sulphur preparation is largely replacing the Bordeaux mixture, having been proved quite as effective, cheaper,

mer, add 40 gallons of water for the pome fruits, as apples, pears and quinces; and use only one-half gallon of the solution to 50 gallons of water for the peach and other stone fruits. In summer this spray will be rendered more effective for insects by adding 2 pounds of arsenate of lead for every 50 gallons of the mixture.

### Danger in Arsenate Spray Materials

Paris green and London purple are fast falling into disfavor among experts; the latter, being a by-product varies so materially in strength that one is liable to scorch the foliage by an over-dose, if he does not err in the opposite direction with a solution not strong enough to avail.

But with any spray, the only really satisfactory work comes through thorough persistent application. Halfway business is just that much better than nothing, but it will never rid one of the pest. Good material is an essential. A good spraying outfit is equally a necessity, one which will throw the spray into the very tops of the trees, and with force to penetrate to every part, instead of merely washing over the lower branches. But the man behind it is, after all, the main factor in assuring success.

### Apple Culture

The Geneva (New York) experiment station has conducted experiments to compare the results of tillage, or sod mulch, and finds in summing up that the average cost per acre of growing and harvesting apples in sod was \$51.73. Under tillage, \$83.48; difference in favor of sod, \$31.75. Subtracting these figures from the gross returns, leaves a balance per acre for the sodded plots of \$74.31. For the tilled plots of \$140.67—an increase in favor of tillage of \$66.36.

The average yield on the plots left in sod for ten years was 69.16 barrels. On the plots tilled ten years, 116.8 barrels. A difference of 47.64 barrels in favor of tilled plots.

These are exact figures as given by the station bulletin No. 383, and I cannot see any reason for commercial apple growers to ignore them. Working in orchards among trees is a trying task, but I am confident the man who cultivates early and thoroughly will receive due compensation (unless wood growth is too luxuriant), says Apple World.

The only exception I could allow would be where trees stand in moist soil. I have observed quite a few that appeared thrifty, and produced good crops in low soils. These generally are richer in organic matter than drained soils; nevertheless we have it to control by cultivation and fertilizing, whether wood growth or better fruit is desired.

### BAD DREAMS

#### Caused By Coffee

"I have been a coffee drinker, more or less, ever since I can remember, until a few months ago I became more and more nervous and irritable, and finally I could not sleep at night for I was horribly disturbed by dreams of all sorts and a species of distressing nightmare.

"Finally, after hearing the experience of numbers of friends who had quit coffee and were drinking Postum, and learning of the great benefits they had derived, I concluded coffee must be the cause of my trouble, so I got some Postum and had it made strictly according to directions.

"I was astonished at the flavour and taste. It entirely took the place of coffee, and to my great very satisfaction, I began to sleep peacefully and sweetly. My nerves improved, and I wish I could wean every man, woman and child from the unwholesome drug-drink—coffee.

"People do not really appreciate or realize what a powerful drug it is and what terrible effect it has on the human system. If they did, hardly a pound of coffee would be sold. I would never think of going back to coffee again. I would almost as soon think of putting my hand in a fire after I had once been burned. Yours for health."

Postum comes in two forms:

**Regular Postum**—must be well boiled. 15c and 25c packages.

**Instant Postum**—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage instantly. 30c and 50c tins.

The cost per cup of both kinds is about the same.

"There's a Reason" for Post-

—sol—

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to correct the mistake of slaughter of innocents, we must at the same time in self-defense wage heavy war against the six-footed, says The Indiana Farmer.

Even in a small way, this pays, as some of our own experiments last season fully convinced us. For years we had been aware of the fact that without spraying for curculio, the plum crop was for us a failure. And though only the small tin sprayer was used, restricting the material to the arsenites alone, it was very much better than no spraying. But with the brass sprayer and increased power behind it, the advantage is apparent.

Only two applications of Bordeaux and arsenate of lead were used and these just before the buds opened and just after the petals fell; for we were bound not to endanger the bees by spraying when the trees were in full bloom,—it was a marvel to the neighborhood that in an "off" year for fruit, we had it in abundance. "It must have been the spraying," was the universal verdict, and it verily did seem that circumstances admitted of no other explanation. There were some wormy apples, for the application three weeks after the blossoms fell and the one the last week in July to catch the last crop of codling moth had been omitted, but with apple and peach trees bending with fruit

and it may be made up in any desired quantity, the concentrated form keeping indefinitely if covered with some good mineral oil to prevent the forming of a crust by contact with the air.

### Making Lime Sulphur Spray

The formula preferred by the Pennsylvania state authorities call for 1 pound high grade lime to 2 pounds sulphur, and 1 gallon water. If a regular cooker for the purpose is not available an iron kettle may be used, but always avoid copper or brass,—unless you wish to ruin the kettle. Be sure that the chemicals are pure. Otherwise, there will be a large amount of sediment when there should be very little.

When the water is boiling hard, dump in the unslaked lime, and when this is nicely started to slacking, add the sulphur, the "powdered commercial" or "flowers of sulphur" being the preferred forms. Boil hard,—note the adjective,—for 45 minutes, the extreme heat serving to unite the chemicals, and the product when finished should be about one gallon. If some of the sulphur proves on trial not to be fully dissolved, boil a little longer.

As a spray during the dormant stage, for the various scales or blister mite, dilute with 7 gallons of water. In sum-



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over 300,000 fruit growers, farmers, gardeners and florists have saved growing crops—saved time—saved work—saved one-half the amount of solution ordinarily used. Get the Free Book and learn the tested ways of spraying to banish injurious insects, blight. How to know when and how to

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Volume

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EST by ne po sprays. If choice of a spraying for right time, thorough.

For near not after. the mixture leaf and fruit. Timeliness in the control particular. When such as specified, the numbers represent proportion chemicals. the last represents the of water. stance, Box 50 means copper sulphate 50 pounds stone 50 gallons water.

Spraying Two chief govern sprayers insects:

1. Poison on the foliage. mature fruit eaten by insects which the leaf. Among using forms insects a leaf-eating current worm, can the various caterpillar and codling. 2. Spray kill insects in contact with which are feeders. leaves or buds. ing insects thrip, pear insects, cod or lime-sulphur must be ve the material.

Fungous forms of plants microscopic in plants as in various damp weather for their consists in dilute mixture spores which caustic to the spores plant tissue be large.



The Oldest  
Fruit Journal  
in America

# GREEN'S FRUIT GROWER

Published by  
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Company

Volume 35

Rochester, N. Y., February, 1915

Number 2

## Timely Spraying Plans for Paying Crops

**D**ESTRUCTIVE insects and plant diseases caused by fungi may be in a large measure controlled by spraying. To be effective, however, it is necessary to know what insect is to be fed on poison and what are to be killed by contact sprays. If fungous diseases are to be prevented, the choice of a proper fungicide must be made. Success in spraying follows the use of the right materials at the right time, provided always that the application is thorough.

### Things to Be Remembered

For nearly all fungous diseases, spray before rains, not after. When spraying for insect pests alone, apply the mixture after rains. Spray thoroughly. Every leaf and fruit must be coated in order to be protected. Timeliness and thoroughness are more important factors in the control of diseases and insect pests than are the particular mixtures of poisons used.

When solutions such as 5-5-50 are specified, the first two numbers represent the proportion of the chemicals used and the last number represents the amount of water. For instance, Bordeaux 5-5-50 means 5 pounds copper sulfate, five pounds stone lime and 50 gallons water.

### Spraying for Insects

Two chief principles govern spraying for insects:

1. Poisons sprayed on the foliage or immature fruits will be eaten by chewing insects which feed upon the leaf or fruit. Among surface-feeding forms are such insects as various leaf-eating beetles, currant worm, apple worm, canker worm, the various forest caterpillars, bud moth and codling moth, etc.

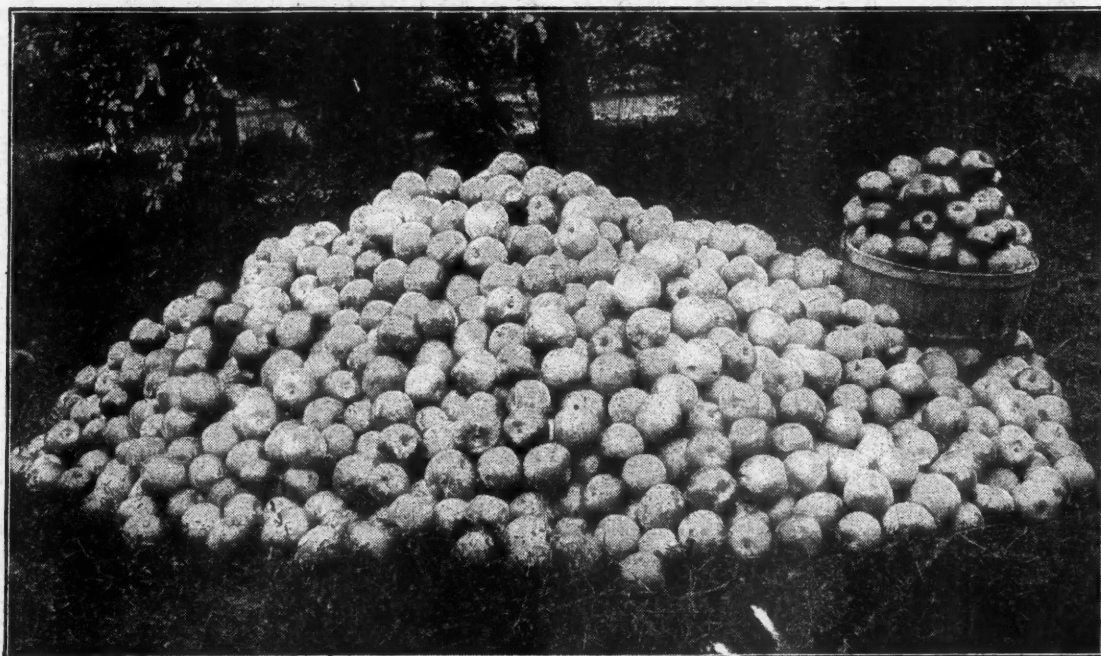
2. Sprays which kill insects by contact with their bodies are used for insects which are not surface feeders. Such insects cause damage by puncturing the leaves or bark to feed on plant juices. Among these sucking insects are the various scales, plant lice, red bug, pear thrip, pear psylla and grape leaf hopper. Against such insects, contact sprays of oils, soaps, tobacco extracts or lime-sulphur solution are used. The application must be very thorough as the insects must be hit by the material or it will not be effective.

### Spraying for Fungous Diseases

Fungous troubles are due to the growth of minute forms of plant life which lives on plant tissues. These plants reproduce themselves by spore bodies, microscopic in size and bearing the same relation to these plants as seeds to larger plants. The spores, scattered in various ways from diseased areas, particularly during damp weather, start new infections wherever conditions for their growth are favorable. Treatment usually consists in coating all susceptible plant surfaces with dilute mixtures, caustic enough to kill these tender spores when they start to grow but not sufficiently caustic to injure the plants sprayed. Treatment after the spores have begun to grow and have penetrated the plant tissues is usually ineffective. Treatment must be largely preventive. Common fungous diseases

We are indebted to the Agricultural College of Cornell University and the New York State Department of Agriculture for much of the valuable information in the following article, and would suggest that our subscribers keep it for future reference. Watch coming issues for important pointers on spraying throughout the season.

are the various mildews, apple and pear scab, leaf spot, fruit rot, black knot, black rot of grape, etc. Bordeaux mixture has led among fungicides, but various compounds of sulphur are being used, and for the apple a dilute lime-sulphur mixture is a standard fungicide.



SPRAYING MEANS MARKETABLE FRUIT

### Apple

**San Jose Scale** is a typical sucking insect which draws its nourishment from plants by means of the mouth parts that pierce the inner tissues. Over the insect is a waxy scale covering, circular in form. Slightly infested bark shows, in winter and spring, minute dark cones about the size of pin heads, often accompanied by a reddish discoloration of the surrounding bark. When the bark is crowded with insects many dead ones of light color give an ashy appearance and the inner bark may show much discoloration. In June young come forth and crawl about, but shortly insert their mouth parts and become fixed in their life position. Several broods follow throughout the summer, the later ones settling upon the fruit and causing much spotting. Treatment is most successful while the leaves are off and the temperature is above freezing. Lime-sulphur solution, prepared at home, or the commercial product, is the standard remedy. Miscible (soluble) oils are also effective in controlling the scale, but sometimes serious injury to the tree follows their use. Whale oil soap, 2 pounds per gallon of water, or laundry soap, 1 pound to a gallon of water, applied when trees are dormant, will control San Jose scale, but serious injury to fruit buds sometimes follows the use of whale oil soap

at this strength. In spraying to control San Jose scale, success results only from the most careful application. All parts of the tree above ground must be covered with the material used.

**Bud Moth of Apples.** In the spring small brownish caterpillars often feed on unfolding leaves and blossoms. Arsenates in the spraying mixtures suggested for apple orchards afford control, or arsenate of lead may be used alone. Spray as for tent caterpillars.

**Case Bearers.** Small caterpillars, carrying protective cases either cigar or pistol shaped, often feed on unfolding leaves and are controlled by the same spray as is used on bud moths and tent caterpillars.

**Tent Caterpillars.** These build the common webs often seen during the late spring upon wild cherry and apple trees. Arsenical poisons, such as arsenate of lead, 2 pounds to 50 gallons of water, or 2 pounds of arsenate of lead with 50 gallons of Bordeaux mixture or lime-sulphur, will control tent caterpillars, bud moth

and case bearers, if applied when the buds begin to unfold and first green leaves appear.

### Blister Mite.

Brown, corky, thickened spots on the leaves of apple and pear trees indicate the presence of the blister mite. Summer spraying is useless, as the mites are between the upper and lower leaf surfaces. During the dormant season, or as the buds swell, apply lime-sulphur solution, at about two-thirds the strength recommended for the San Jose scale; this will control the blister mite very effectively. (See table.) Trees thoroughly sprayed with lime-sulphur for San Jose scale will be free from blister mite.

**Oyster Shell Bark Louse and Scurfy Scale.** These common scale insects are larger and of a lighter color than the San Jose scale. Both winter as eggs beneath

the scale covering and issue about June 1 to 15. While young, they may be killed by any of the common contact sprays, such as whale oil soap, 1 pound to 5 gallons of water, or 10 per cent. kerosene emulsion, or laundry soap, 1½ pounds to 4 gallons of water. Any of these should be applied within two weeks after first young appear, usually from June 1 to 20. When lime-sulphur solution at winter strength is regularly used, enough material will usually adhere to the bark to control the young of these scales when they hatch.

**Aphides.** These plant lice usually curl the leaves on the terminal shoots of young apple, plum or cherry trees. The lice suck the interior leaf juices and may be killed by soap solutions, tobacco extracts, oil emulsions or other contact sprays applied at summer strength. Early treatment as buds appear green and before blossoms open has proved most effective. The first brood from the winter eggs appear then and are most readily hit. Treatment in no case should be delayed until leaves begin to curl. **Remedy:** Kerosene emulsion, using 4 to 10 per cent. of oil; nicotine preparations such as black leaf "40," used 1 part to 800 to 1200 parts of water; or ordinary laundry soap, 1½ pounds to 4 gallons of water. Of these the nicotine preparation has proved most effective.



**Apple Maggot or Railroad Worm.** The adult, to the untrained eye, resembles a house fly in appearance. It inserts eggs under the skin of the apple, and the resulting small white maggots make brownish burrows in the flesh of the fruit. Summer and early fall varieties are particularly susceptible to attack. Partially effective treatment is to pick up the drop apples every two or three days and feed them to pigs or bury them deeply. If a compound of water, 50 gallons, molasses, 12½ pounds, and arsenate of lead, 2½ pounds, be thoroughly mixed and sprayed upon the lower part of each tree, a few branches being covered, the adult flies will feed upon the sweetened poison and be killed before the eggs are laid. To be effective this remedy should be applied when the first adults of each brood appear. Application for the first brood should be made July 1, and for the second brood about August 20, followed by at least one more application ten days later.

**Canker Worm.** These "measuring" worms, when abundant, defoliate apple trees in May or June. They hatch soon after the leaves appear, and when disturbed the caterpillars will hang from a silken strand. The female moths are wingless and in late fall or early spring crawl up the trunks of the trees to lay their eggs on the branches. A thorough spraying with arsenate of lead, 2 pounds to 50 gallons of water, applied before the blossoms appear and followed by another application soon after the petals drop, is an effective method of control. Care must be taken to apply the poison spray to the tops of the trees, where the insect is most abundant and destructive. Band the trees with tangle-foot to prevent the wingless females from climbing.

**Codling Moth.** Wormy apples are almost wholly caused by the larva which hatch from the eggs of this moth. The eggs are laid from ten to twenty days after blossoming time, upon the leaves or young fruit. On hatching, the minute worms usually seek entrance to the apple at the blossom end, where they feed upon the fleshy stamens, and in the calyx before entering the apple. Any arsenical poison there will kill the insect. Paris green and arsenate of lead have both proven effective. Either may be combined with Bordeaux mixture when used for fungous diseases. Only arsenate of lead is used with the dilute lime-sulphur mixture at summer strength. **Treatment:** Immediately after the petals fall, apply the spray mixture downward upon the upturned apple calices, using concentrated lime-sulphur solution, 32° Beaumé, 1 to 40, with 3 pounds of arsenate of lead added to each 50 gallons. After the calyx lobes close, it is almost impossible to get the poison where needed.

**Borers.** These larvae burrow in the trunk near the surface of the ground. Watch the trees for sawdust-like castings, and dig out the borers with a sharp knife. Young apple trees should be looked over carefully at least once each year for this pest.

**Apple Scab.** This most important fungous disease of the apple injures both the leaf and fruit. During the winter the fungus remains in fallen leaves. In the spring spores are produced and carried to the opening foliage or young fruit during damp or rainy periods. Bordeaux mixture (3-3-50) has been the standard preventive, but dilute lime-sulphur (1-40) is now largely used. Arsenate of lead is added for all spraying after blossoming time for leaf-eating insects. **The important seasons to spray are just after the blossoms separate, but before they open, and just after the petals fall.** An additional spraying three weeks later is of advantage in damp seasons.

**Apple Canker.** This disease apparently usually enters through wounds, therefore, paint all wounds made by pruning or removal of diseased bark. Cut off all badly cankered branches. Small cankers upon large branches may be cut out, taking care to remove all diseased bark. Disinfect with lime-sulphur, Bordeaux mixture or corrosive sublimate solution, 1 to 1000. Thorough spraying of the branches and bodies of the trees with lime-sulphur solution (1-12) or Bordeaux mixture (10-10-50) and the removal of all cankers will soon control the trouble. With good culture and renewed vigor of the tree the disease gradually disappears.

**Fire Blight. Twig Blight.** This is a bacterial disease, similar to pear blight, and is not controllable by spraying. Cutting out and destroying diseased parts is the chief method of control. Live bacteria are carried over in cankers on the main limbs and trunks of trees. All such cankers should be removed with a sharp knife cutting well into the healthy bark. Blighted twigs should also be removed from young trees as soon as noticed, cutting well below the diseased portion, and all wounds should be disinfected with a corrosive sublimate solution, 1 part to 1000. Large wounds should afterwards be painted with gas tar or lead paint.

## Plums for Profit and Pleasure

Written for Green's Fruit Grower by  
JOHN E. TAYLOR

There is no branch of fruit farming that will bring so much money for so little an amount of product as early plum raising.

If the kind of plum known as the June plum can be raised, they will sell readily in a wholesale market for \$4.00 per bushel.

This enterprise has been thoroughly tested by A. A. Rackliff of Kennebec County, Maine. About eight years ago he planted a plum orchard of about 50 trees. About

half of the trees were of the June plums. When they came into bearing, the first year they produced about a bushel. This year each tree had about a bushel and a half, and as Mrs. Rackliff cared for the plums and picking, she looked after the marketing and sold over 30 bushels to the markets in the village of 10,000 inhabitants near by. She made "good" money.

To show that the early plum is preferable; when the later plums came into bearing, she sold all she raised, there being about 20 bushels, yet they sold for only about \$1.75 per bushel.

These plums are easy to raise and easy to care for. They are treated in a similar manner to apple trees.

Growing the plum for market is one of the pronounced profit branches of fruit business. This is especially true with the early plum. Alton Hamm of Kennebec County, Maine, has proved this to his satisfaction after an experience of several years in the work. He raises a large variety of the fruit, but he finds that the June plum as he calls it, ripens along in June and the first of July. There is always a ready market for this kind of fruit as it is the time of year there is little fruit in the markets.

During the past season, he raised about 20 bushels of the early variety of plums and was able to sell them for \$4.00 per bushel at the retail stores in bushel quantities and he had calls for more orders than he could fill.

The trees are hardy, and very little trouble is experienced by insects. In the spring there are usually some insect nests, but if once destroyed, there is no more trouble for the rest of the season. The plums are easy to harvest as the trees are not very high and Mrs. Hamm did a great deal of the work and enjoyed it. The money for this product of the farm comes when most crops are beginning to grow and on most farms it is greatly appreciated.

## "Cheap" Fruit Trees

Editor of Green's Fruit Grower:—Apple trees may be bought for ten cents or for twenty cents when purchased in lots of one hundred of one kind. There is a possibility that both trees will leave some profit to the grower; in other words, a certain class of American nurserymen are catering to the demand for a cheap tree. The public can have what they pay for and no more. The fruit grower who wants a tree well-grown on first-class roots, propagated with care, will have to pay for it sufficient to reimburse the man for the additional expense. For instance, in the East, it is believed that French Crab stocks are the best for apples because the roots are cleaner from aphids, crown gall, hairy root and other diseases which are now recognized as dangerous to introduce into the orchard. Second, they thrive better under Eastern conditions. In this particular instance the American grower, for instance Kansas grown, seedlings during recent years could be purchased at one-third the price of the highest grade French grown seedlings. Naturally the man who is growing cheap trees would purchase straight rooted American grown seedlings. These are then grafted in the winter and are probably sent South to be grown in some section where the growing season is longer than it is in the North. In this way the trees produced are of good size and are grown at a minimum of expense, and such are often planted in our Northern orchards. Should a Northern nurseryman purchase American grown or French grown seedlings, he may either grow them until August and then bud them or graft them as before mentioned and grow his trees for three seasons to secure a satisfactory size. The trees grow slower, but the slower grown tree weighs more than a fast grown tree of equal size.

There are nurserymen who are taking pains to cut buds from strong growing profitable trees, who are trying to produce trees true to name and give the purchaser all he is willing to pay for. The question is simply for the fruit grower to decide whether it is worth while to encourage the man who is trying to do his best or whether he will run the chance and purchase from the indifferent grower. It is surprising the number of men who will take the gamble and feel that for ten cents they can buy a first-class tree. There are trees and trees, and none know it better than the nurseryman.

Whoever plants an apple tree, especially along the Atlantic Coast or even the North central states, has made an investment and has made up his mind to expend from \$3 to \$5 in taking care of each apple tree before it will be in bearing. I think if one will carefully work out the cost of carrying an apple tree to bearing, he will find it will be somewhere between these figures. How foolish, then, to stop at five or ten cents in the initial expense, for the possibility of the tree repaying the expenditure depends to an enormous extent upon the judgment used in the first purchase. If a cheap, poorly grown tree and one with a poor root system is planted, one may never get the reward. It is interesting to note that in this year of an enormous crop, the average yield of the bearing trees of the United States is less than one-half a barrel per tree, that frequently it is only one-tenth of a barrel per tree; in other words, there are a lot of drones in the orchards, and for the live fruit producers the important question is: Am I going to plant a drone tree or a producer? There are apple orchards in New York State this year which are averaging ten barrels per tree, that is, there will be a block of orchard, five acres or even ten acres or more, from which an average of ten barrels per tree will be packed. These orchards for a term of years will turn in a gross revenue of from \$20 to as high as \$40 per tree; in other words, one single apple tree will turn in as much money as an acre of beans or wheat or as much revenue as the average cow of the state. Men will expend \$50

in buying a cow and have to feed her three times a day and milk her twice. The same farmer who is going to buy an apple tree, when he contemplates purchasing a horse will always prefer and pay more for a well-bred, well-put-up, close-coupled work horse because he can do more work. If he is well-bred in one of the lines of the draft breed, he is worth more than a scrub. He will pay more for a cow capable of producing 10,000 pounds of milk than for one whose maximum is 4,000. Why not use the same head in buying trees? If in doubt as to the difference there is between trees take a day and visit some reliable nurseryman or two or three of them and be from Missouri—be shown—and don't buy until you know what you are buying. If apples are to be grown cheaper, the man who purchases trees which will be good producers will certainly be able to stay in the game and make money, while the man with an ordinary scrub tree would starve. Think of the time and energy which the planter and his children will waste growing a scrub tree when they might be reaping dollars by caring for a good one. We never get something for nothing. It costs more to grow a tree right than to grow a scrub, just as it costs more to grow a pure bred cow than to grow a scrub cow.

### Trees True to Name

The points to look for in purchasing a tree are: First, that it be true to name. Many fruit growers cannot tell by looking at a young tree whether it is true to name, but many nurserymen can, and for one who cannot tell, it is safer to deal with a house which is reliable, who take pains to cut their buds carefully, and are in the habit of furnishing trees true to name. Second, plant those varieties adapted to the locality. Adaptation is an important point, and if one is not well informed on this, it is well to get assistance from those who are making a study thereof. We are satisfied too that within the variety there is difference in vigor; in other words, the evidence in our own nursery convinces us that the progeny of certain trees are stronger growers than others. We have now checked them up for three generations and are being forced to discard one or two because they are not good enough growers in the nursery. In addition, we want to be sure that the tree from which fruit trees are propagated is a good producer, although we have not as yet proof that the quality of large yield or small yield is transmitted, but young trees we have in our orchards propagated from heavy bearing, high quality trees are reproducing the parent. Third, we want a first-class root system. We can never see the roots after the tree is planted. It is important then to secure the best that is known, and we want trees which will be profitable both to us and to our children. Such trees are a joy to witness, not only to the grower but to the whole community.

I recently saw two blocks of Twenty Ounce, one on one side of the road, is from one strain of trees; the other is on the same road and a little further beyond on the opposite side, and so far as can be discerned the locations are perhaps equal; both orchards seem to promise equally well up to three or four weeks before harvesting. The one carries its fruit to maturity in good shape and is highly profitable, in fact, \$1,500 worth of fruit has been sold from one acre. In the other case, about three to four weeks before harvest the fruit begins to fall, to drop, to rot, and by the time it should be ready to pick, there is relatively little left. The grower with the first-class orchard feels that while some of it is due to care, a great deal of it is due to variation in the trees themselves.

Dr. Fletcher of Virginia Experiment Station has recently shown as a result of four years' record of an orchard in Virginia, that one-third of the apple trees made two-thirds of the profit and that one-third of the trees were absolute robbers; they did not make expenses.

Although we do not know much about it as yet, the work with oranges and lemons and the variation which is known to exist in other fruits lead us to wonder whether there are not individuals in every variety which are better than others of that variety and whether they are not the ones to use for parents. Naturally the nurseryman who spends time searching for such trees and carefully growing them on first-class roots, at least get his living and be repaid for the extra expense, but it is up to the fruit grower who buys the trees to determine whether he shall get his due reward. Unfortunately not all who say they are doing this selection are doing it and it is a case where the buyer must beware.—Samuel Fraser, N. Y.

## Spraying and Pruning

By GEORGE M. LIST

As we go about our pruning of the fruit trees this winter and spring, let us keep in mind that all phases of orchard work are very closely related. Especially is this true in regard to pruning and spraying, says Colorado Agricultural College.

The failure to control the codling moth, leaf-roller, San Jose scale and other insects this past season in many cases can be traced to the lack of pruning or poor pruning. It is impossible to reach with the spray all parts of the tall, thick, bushy trees that are found in many orchards. Almost invariably the most damage is done by these various insects in the center or top of such trees, where the spray does not penetrate. Annual systematic pruning should be practiced with one of the main objects in view, that of shaping the tree so all parts can be easily reached with the spray.

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# Scientific Fruit Production

Written for Green's Fruit Grower by WARREN FERDE WILCOX

**T**HE host of enemies arrayed to combat man's attempt to secure a living from the soil is sufficient to try the patience of the ordinary agriculturist. There seems to be nothing immune from the attacks of diseases, insects, bugs and lice and in the creeping, crawling and flying line, while drouth, floods, frost, hail and other phenomena are at hand to assist in injury to the crop.

Time was when each and every one of these pests stalked up and down the land unmolested. But science interposed. The keenest minds of modern men have devised means whereby practically every one of the enemies which seek to curtail the products of the soil are held in check at least, and in many cases entirely prevented from working their nefarious devices.

But in no branch of agriculture has the advance of science been more marked than in fruit production. The time when orchards could not be depended upon to produce an annual income is gone. In years gone by the production of fruit was a gamble all the way through; the orchardist took a chance all along the line; it was a hit or miss game with considerable miss. If Jack Frost appeared during or just after the trees were in bloom, he ruined the prospects of a crop that year and the orchard produced no income that year. Even if the frost peril were passed over, disease and insects worked great disaster. Too often the trees were overloaded, producing small and inferior fruit. And so it went all along the line.

Today fruit growing is one of the safest and sanest of occupations, and fruit land covered with trees in bearing is the most valuable of all land. Prices paid for fruit orchards in some sections are almost incredible.

Great attention is paid now to pruning; many old orchards which have been neglected for years and now towering the skies, have been pruned severely and, with the application of other modern scientific processes, brought into a highly productive and profitable state. Young trees are kept pruned and held down to a lower growth, more readily handled. Short trunked trees with low heads are easier to handle in every way; easier to heat, easier to spray, easier to thin the fruit, easier to pick the fruit.

Up to date orchardists are now equipped with some practical make of heaters or "smudge pots" which are placed at intervals throughout the orchard during the blooming season. Fuel is arranged and everything in readiness so that whenever the mercury goes down to the danger line, help is called out and the smudge pots or heaters lighted. All night long the faithful army labors, holding the frost king back outside the orchard and maintaining a safe degree of temperature among the trees. Does it pay? It does. The whole year's product can be wiped out in a single night; and orchard heating, even though in its infancy, has been demonstrated to be a success. All kinds of fruit are thus saved, the citrus in California and Florida, apples, peaches, apricots, pears, etc., even the lowly strawberry and also tomato plants in the garden.

After the danger of frost is past and the trees appear to be overloaded, help is placed in the orchard and a great many of the young fruit removed, a process called thinning. This requires time and help and money; but it pays, unless you are growing apples for cider.

Then the insects, diseases, scales and whatsoever pests there may be that love to sport about the bark of the tree, the branches, and elsewhere, either with the ultimate outcome of destroying the tree or the fruit, these, too, have met their Waterloo, for the orchardist brings out this spraying apparatus, of which there are dozens, of varieties, and mixing up some kind of dope after one of a hundred formulae, depending upon which of the enemies he is to fight, goes about through the orchard dispensing a mistlike death to each and every one of the minute hosts on mischief bent.

Then in the West, where irrigation is practiced, water is turned through the furrows of the orchard, giving the trees moisture as needed. Irrigation is looked upon as a great step in scientific agriculture. It would be more

general were water more readily obtainable. With the application of water at will, there is no drouth, no flood.

After Jack Frost has been cheated out of his blighting kiss and the fruit has been brought to perfected maturity on a tree free from disease or pests, with fruit not too closely crowded, with no damaging drouth, after it has been brought through all these perils and the sun is painting beautiful colors on the cheeks of each and every splendid specimen, then goes out the call for pickers and packers. For lo! the harvest is at hand and is heavy and the season is short, the work must be done before freezing weather. Then men and boys, women and girls invade the orchards and carefully pluck the fruit that appeals to every sense—beautiful to the eye, inviting to the nostril, soft to the touch and tempting to the palate, even as was the first fruit back there in the Garden to our forefathers.

Carefully is it plucked and carefully handled; carefully placed on the grading tables and graded, wrapped with tissue paper, and packed into bushel boxes with greatest tenderness. Finally it is loaded into refrigerator cars and hurried away to the waiting millions living far from the orchards, who pay a fancy price for fruit. And the orchardist, thanks be to science, has no off years, but every year realizes a working profit on

publication. The size of the seed is also a factor that determines its value; and the tests herein reviewed furnish evidence tending to show that, other things being equal, the largest seed are the best and the smallest seed the poorest.

## The Boy who is Popular

Written for Green's Fruit Grower by  
FRANK I. HANSON

There is always a warm welcome for the boy who is reasonably polite and agreeable. If he knows how to make himself useful and entertaining, his popularity is assured. The following are some of the qualifications of the popular boy:

He refrains from the use of vulgar and profane language, and discourages its use among the other fellows. Foul language is a blot on any one's character.

He keeps his temper when other fellows "make fun" of him, or when his work or studies prove a trifle vexing. Self-control is one of the most valuable assets of life.

He accustoms himself to meet strangers without embarrassment by observing the way other and wiser people conduct themselves. Composure and grace come with very little training.

He solves the most of his problems at school, and makes the most of his study hours. One principle mastered unaided does a fellow more good than a dozen solved by his teacher.

He knows how to darn a hole in his socks, sew on a button or launder a shirt if necessary. It is no disgrace to do odd jobs around the house when mother is tired.

He is always courteous to older people. His hat is tipped when meeting ladies, and "please" and "thank you" are never forgotten. Study a good book on etiquette.

He knows how to write a good business letter. If necessary, answer a few advertisements, and good model letters will be sent in reply. Study them carefully as to style and composition.

He knows how to tap and repair his shoes, thereby saving many dollars. If there is no cobbler in the neighborhood, a few dollars can be earned by doing repairing for others.

He knows how to play some musical instrument sufficiently well to enter-

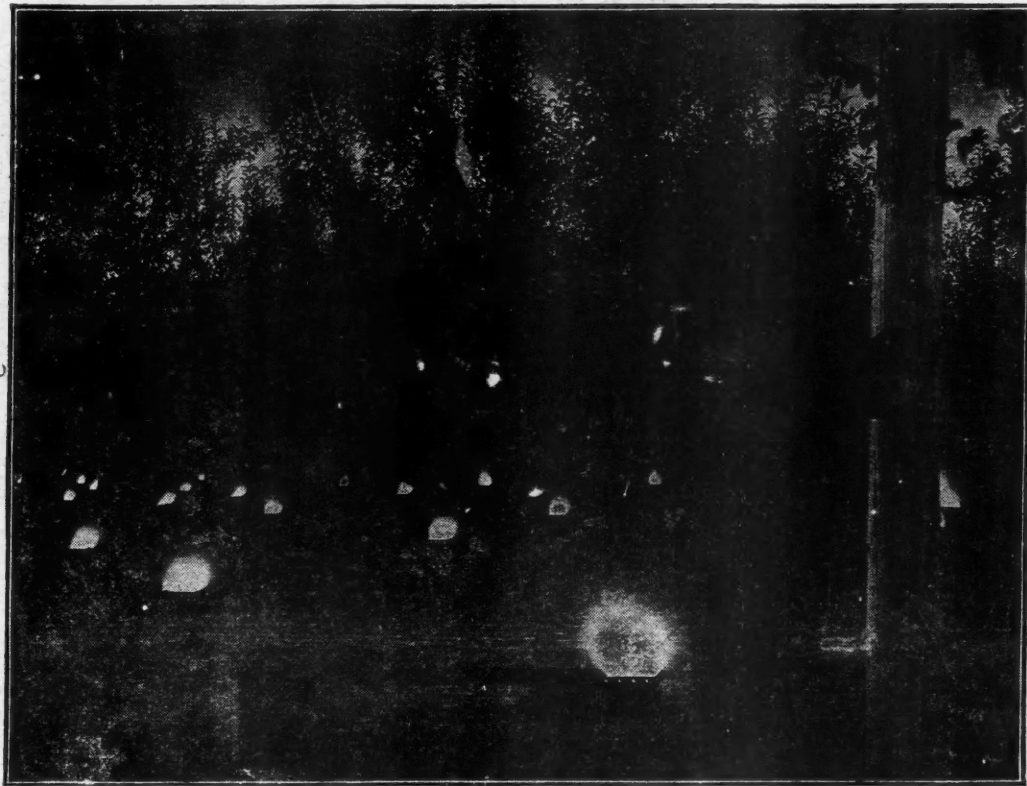
tain his friends and the family circle. One does not have to be an expert to enjoy music.

He knows a few simple "first aid" rules. He should know how to stop the flow of blood from a severed vein or artery, and how to rescue a drowning person. Have a friendly talk with some doctor or study some good medical book.

## Large Seed a Factor in Plant Production

By M. B. CUMMINGS, in Vermont Station  
Report

Good seed, better seed, and the best seed are terms of prime importance in plant production. Good seed is that which is true to name, well preserved, viable and free of foreign seed and insect ravages. Better seed than that which is merely good, may sometimes be procured by taking advantage of specially favorable seed years, and occasionally by the payment of higher prices for seed that is carefully screened. The best seed and the requirements thereof have not been fully determined. That parentage is one of the factors that make for the best seed is a popular notion that is being supported by recent experimentation. Plant breeders are finding evidence of the value of parentage selection. It will soon be possible to formulate a law declaring that the best seed can be obtained by selecting it from plants which exhibit the greatest number of desirable characters, a point which will be discussed in part in this



Heating orchards in the West to ward off effects of late spring frosts. Such frosts do more damage in some parts of West than in Eastern states.

A subscriber to the Weekly Blade, living in Pennsylvania, has sent us an account of a daybook kept in 1814 by one of his forebears, the keeper of a general store in Amity township, Berks county. From this daybook one catches a glimpse not only of what 100 years ago it cost the Pennsylvania citizen to live, but also a glimpse of how he lived. For instance, "with nearly every bill of goods charged would be attached one gallon of whiskey, rum or brandy, price twenty-five cents." Homes were lighted with candles, "costing anywhere from thirty-seven and one-half cents to eighty-seven and one-half cents a pound."

"Calico was thirty-seven and one-half cents to seventy-five cents per yard."

"Tea was \$1 a pound."

"Eggs were never more than ten cents per dozen, with six to eight cents the commoner prices."

"Chickens twelve and one-half to eighteen cents apiece; geese, twenty-five to thirty-seven cents apiece."

"Beef, three to four cents; wool, ten cents to twelve and one-half cents per pound; muslin, fifty cents per yard."

"The climax was reached in one charge—one bushel of salt, \$16."



## Getting the Most of the Fruit Consumers' Money

By JOHN E. TAYLOR

**W**HEN apples were selling for about cost at retail in December 1914, in Maine, R. T. Patten of Somerset County was realizing \$4.00 per barrel and was getting testimonials as far west as Chicago saying that his apples were excellent and putting in more orders.

This was not because the consumers had any love for Mr. Patten more than for any other fruit grower, but he was giving them what they wanted, which consisted of good sound fruit, hand-picked and nicely packed apples throughout, and furthermore there was nothing but No. 1 apples shipped.

There is no trouble in finding a market for fruit of this kind where quality can be shown. This comes from the care of the apples and also the trees. If a fruit grower produces good fruit, the consumers at once become customers. In other words a market is created at once. This is not only true of apples, but of all fruit, especially strawberries. Dr. George W. Twitchell has told how quality has worked in the sale of strawberries.

"The assumption that consumers will not pay more for fresh than old goods is false," he says. "The trouble is the object lesson is not set clearly before them. Place a crate of freshly picked strawberries side by side with those twenty-four hours old, and which will be selected? Cultivate the home market for a rightdown choice berry, plum, pear, currant and gooseberry. In one of our country towns, the past year, the enterprising wife of a plum grower marketed forty-eight bushels fresh from the trees, simply because they were fresh, selected specimens put up in attractive form. The possible home market in this direction is not appreciated by growers, else the home supply would be multiplied many times.

### Ashes and Apples

It seems a proved fact with C. Davis Miller of Somerset County, Maine, that wood ashes make the best fertilizer for apple trees of any that can be used. He has tried all, and claims that ashes give the best results in several ways. They seem to kill the insects in the ground, destroy the weeds and fertilize the orchard for better fruit.

He harvested his crop this year with excellent results. From 100 trees of the Wolf River variety he got at the rate of five barrels to a tree. The fruit was well shaped and well colored. The trees were 18 years old. They have been well cared for, and ashes have been used quite freely around each tree. These are put on in the fall. He spreads a bushel around each tree. He also cultivates his orchard, putting on various crops.

To test out the value of the ashes, he took a small part of his orchard, putting dressing on some and ashes on the rest. He found that the ashes did the better and weeds were less frequent; and where he put ashes, clover sprang up thick.

The ashes were bought for 15 cents per bushel, and the expense for getting them was far less than manure or commercial fertilizer.

### Government Whitewash

We give below the formula for government whitewash. We believe this should be published at least once each year to encourage its use on the farm. This is the season when stables, cellars, fences and other structures should be whitewashed. Paint is unusually expensive, hence the demand for a serviceable whitewash that can be used as a substitute.

Take a half a bushel of unslacked lime, slack in warm water, cover it during the process to keep in the steam; strain the liquid through a fine sieve or strainer; add a peck of salt previously well dissolved in warm water; three pounds of ground rice boiled to a thin paste and stirred in boiling hot; half a pound of powdered Spanish whiting and a pound of glue which has been previously dissolved over a slow fire.

Add five gallons of hot water to the mixture, stir well and let it stand for a few days, covered, to keep out the dirt, strain carefully and apply hot.

Coloring matter may be added if desired.

## General Plan for Apple Spraying

**First Spraying.** Dormant season, before leaf or blossom buds open. Use lime-sulphur for San José scale or blister mite as per table. This spraying is not necessary if these pests are not present, but is helpful in promoting the general health of the tree.



Brown Tail Moth.

**Second Spraying.** As the buds swell but just before the blossoms open. Use lime-sulphur solution at summer strength (see table), with 3 pounds of arsenate of lead added to each 50 gallons of the diluted wash,

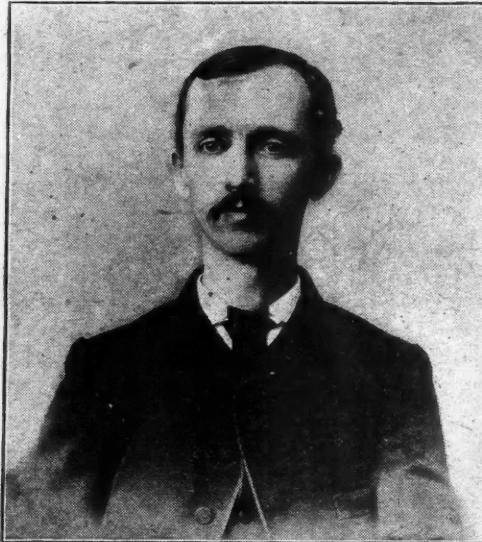
for apple scab and other fungous troubles, bud moths, case bearers, canker worms and tent caterpillars.

**Third Spraying.** Immediately after the petals have fallen. Use lime-sulphur, summer strength, or Bordeaux mixture, 3-4-50, with 3 pounds of arsenate of lead added to each 50 gallons. This is the most important spraying for apple scab and codling moths and also helpful in controlling canker worm, bud moth and curculio.

**Fourth Spraying.** Ten days or two weeks later. Use lime-sulphur solution at summer strength or Bordeaux mixture, 3-4-50, with 3 pounds of arsenate of lead to each 50 gallons, for apple scab, leaf spot, codling moth, canker worm, etc.

**Fifth Spraying.** Eight to nine weeks after the blossoms fall. Use same material as fourth spraying, for late scab infections and second brood of codling moth.

These sprayings rank in the following importance: if scale is present, 1-3-2-4-5; scale not present, 3-2-4-1-5. Spraying number 3 should never be omitted. Spraying number 1 should never be omitted if San Jose scale is present.



FRANK H. SWEET

## Keeping the Harness in Good Shape

Written for Green's Fruit Grower by F. H. SWEET

The general repair outfit on the farm is not complete if there is nothing in it with which to mend the harness. It not only saves money by permitting one to "cash in" at noon hours and on rainy days, when much repairing may be done, but it permits the lengthening of the life of the harness.

You can just as well use one set of harness a great many years by providing yourself with the necessary means for making repairs on it.

Always save the pieces of old leather harness. In addition, keep a quantity of new leather harness on hand. It is cheaper to buy this in bulk, and then it can be cut into pieces just as they are needed. At the first signs of stiffness in leather, apply harness grease or oil to soften and help preserve it. The leather should be kept from rats and mice, as they will chew it for the salt it contains.

From old discarded harness, also save all snaps, rings and buckles. As snaps continually wear out, better buy some new ones occasionally, so as to always have some on hand.

### Orchard Notes

The wise farmer does not try to raise a crop of fruit and a crop of hay from the same land. By so doing he fails to get the best possible results from either. Better put all the attention to the orchard, and raise the hay on some other land.

It is very unjust to neighbors to permit trees to grow that are covered with insects or troubled with disease. The disease or insects will spread and finally destroy other trees on the property where they are growing, and the trouble rapidly spreads to neighboring grounds. Either cure or kill. If unable to do the first, cut down the trees and burn them, and do it promptly.

### Wasted Fertilizer

In some sections of Virginia I have seen straw stacks added to season after season, as large as a good-sized barn. Often there would be several of these on a farm, the larger of them where wheat had been threshed. As they become too much in the way, the farmer waits for a windless day or when the wind is in the right direction, and burns them. I have seen thousands of tons of straw destroyed in this way, much as cotton seed was destroyed years ago.

In one county a large quantity of straw is utilized by shipping it to a nearby paper and strawboard factory. The straw thus sold brings the farmer about 50 cents a ton. A man who knows the value of straw recently

came across a pile of 1,000 or more tons ready for shipment. He computed that as a fertilizer this straw was worth at least \$2.50 per ton, in addition to its value as a means of adding organic matter to the soil. He made a campaign of the county in an attempt to show the inadvisability of the farmers selling their straw, and urging its more extensive use as bedding in stables and feed lots.

Straw used as a top dressing on fall wheat has been found to practically insure a good stand of clover on lands where clover is otherwise grown with great difficulty.

## Fruit Growing with Honey as a Side Line for Fruit Growers

Written for Green's Fruit Grower by J. CROW TAYLOR

Honey is an interesting side line to fruit growing that may be profitably enlarged upon in many localities with benefits accruing two ways. The honey crop itself is often a money crop, and aside from this, bees are about the best thing going to develop full fruiting and perfect fruit in an orchard.

There are many instances where people with old orchards uncertain and unsatisfactory in fruiting have developed them into fine producers by keeping a lot of bees and distributing the hives or colonies about over the orchard so that they will be sure to get at the trees in bloom time. It is said that honey bees are great fertilizers for apple blossoms and improve the yield and the quality of the fruit wonderfully.

It may be necessary—probably will—to grow other crops to supply the bees, such as white clover in some sections, buckwheat in others, alfalfa in another and so on. However, the return, from the honey crop will justify all this. Meantime the bees will get part of their support from the apple trees while they are in bloom and in return they will often improve the quality and yield of the apple crop itself enough to make them a profitable investment even though there was no yield in honey beyond the needs for family use.

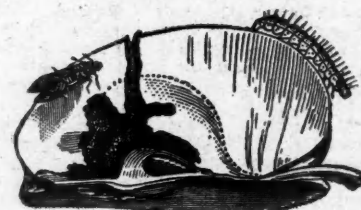
Of course some people take more kindly to or have better success with bees than other. Some have so much trouble that they become disheartened after a few years because of colonies dying out and give it up. It is a mistake to be easily disheartened. Bees seem essential to the welfare of orchards, and those who have had trouble and become discouraged should persist in efforts to keep a supply of bees. By continued study and experiments, difficulties can be overcome and in time the bees can be made profitable themselves, while at the same time they contribute materially to the profits of fruit growing by the work of fertilizing the trees while in bloom.

## The New Brackett Peach

Editor of Green's Fruit Grower:—I am in receipt of your kind favor of the 31st ult., and the specimens of Melon and Mother apples, also two Josephine pears—all came in good condition. I thank you very much for your courtesy in this matter.

The Shiwasssee Beauties which you sent some time ago were duly received and recorded in our journal. They were fine specimens.

In regard to the Brackett peaches which you mention as reminding you of a nectarine, I will say that I have not had the same impression that you had, but I found it to be a very good peach. I suppose you refer to the one that the Berckmans are disseminating. They are growing this variety very extensively and planting it in their orchards. They say that it commands the highest price of any peaches that they grow. Last year they informed me that they sold their Brackett peaches at from \$1.20 to \$2.00 per car cash down as soon as they were loaded into the car. There is another peach by the name of Brackett which was grown in New Jersey several years ago, but it is not equal to the one that is grown by the Berckmans. It is a clingstone, while the one grown by the Berckmans is a freestone.—G. B. Brackett, Pomologist, Washington, D. C.



Codling Moth on Apple.

## The Farm Smokehouse

According to newspaper reports, the farmers in Brooks county, Georgia, have gone back to the old-fashioned smokehouse system of curing their bacon.

As a consequence of this return to first principles, Brooks county is becoming famous for bacon. Last year the county gained considerable publicity by reason of a "bacon parade," the feature of which was a large number of farm wagons laden with the hickory-cured products of the farm smokehouses.

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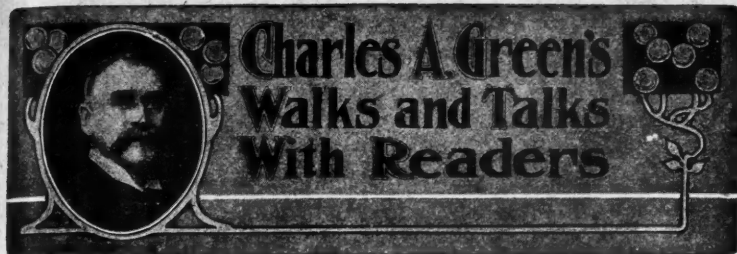
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**Pear Blight.** The best remedy for pear blight is to remove every diseased branch or limb a foot below the point where the blight shows, and burn the branches thus removed. If the cutting off of diseased branches has been neglected, they may be cut off during the winter season.

**Black Knot on Plum Trees.** The black exudations on plum trees are caused by fungous growth, and the usual remedy is to cut off all the branches thus affected, and burn them without delay. At Green's Fruit Farm where frequent cultivation is given and where plum trees are sprayed, we are not troubled with black knot. I cannot remember seeing black knot on plums at our place. Black knot often occurs with scrubby plum trees that are grown along the fence rows where they are entirely neglected.

**Manure in Vineyards.** New York Experimental Stations say that manure applied to vineyards is not profitable and yet the manure gave moderate results. The use of lime on soil of vineyards, on the contrary, increases the yield one-third of a ton per acre. But a ton of lime per acre was applied and yet, notwithstanding the increase in crop, the lime was not profitable. These experiments are not considered definite and may vary under different conditions; generally speaking, however, grape vines do not demand very fertile soil as far as our experience goes at Green's fruit farms.

#### When to Haul Manure

At Green's Fruit Farm we have practiced drawing manure from the stables once a week, aiming to have it removed before it heats. We draw it direct from the stable to the field and spread it from the wagon. If manure is left in piles on the field, much of its substance will be washed by rains into the spots where the pile lies. Horse manure will heat when left in piles for any length of time and lose a large portion of its fertility. These are times when farmers and fruit growers should pay more than ordinary attention to preserving every particle of the stable and barnyard manure in its best possible condition and with the least possible loss, owing to the scarcity of commercial fertilizers brought about by the war in Europe.

#### A Map Showing Where the Great Fruit Growing Sections of the United States Are Located

A pamphlet prepared by the American Pomological Society, indicating where the greatest fruit producing sections are located, is before me. As I look over this map, I find that the most notable fruit growing localities of the United States are along the ocean line, extending from New Brunswick in Canada to Florida, and from thence westward. On the western coast, the great fruit sections are not far distant from the Pacific ocean shore.

While this map would indicate that water protection is helpful in fruit growing, such as is provided by the Great Lakes and by the ocean, there are sections of the interior of the country which are now producing fine fruits. But the map referred to does not indicate clearly what is indicated by the pronounced lines through the interior of the continent.

#### McIntosh Red Apples Selling at \$3.50 per Barrel at Rochester, N. Y.

The apple market of Rochester, N. Y., shows an advancing tendency. Price for Standard A Baldwins is \$2.00, which is the highest price. King and Spy were sold at \$2.75 to \$3.00 per barrel, the lowest price being \$2.25 to \$2.50.

No one will take apples out of cold storage here at less than \$2.00 per barrel for it costs about 40 cents per barrel for storage, or for a brief space of time probably not less than 25 cents.

A few sales of R. I. Greening have been made at \$3.00 to \$3.50 from cold storage, while common storage Greenings sold as low as \$2.00 to \$2.25. Ben Davis sold at \$1.50 to \$1.75, while McIntosh Reds were quoted up to \$3.50 per barrel. McIntosh Red apples seem to have led the market both at Rochester and in Maine and Massachusetts. It is an apple of finest quality, beautiful red color, tender flesh, and keeps well up to January without cold storage treatment.

#### Parker Earle, the Veteran Fruit Grower

There is no man in this country more successful as a fruit grower than Parker Earle, now of Los Angeles, California, where he has retired at the age of 83 years. In a recent issue of the Los Angeles Times, I find reference to Parker Earle's former activity, which I glean as follows:

Parker Earle was the first man to suggest and to carry out in practice the present method of precooling fruit before placing it on board cars for transplanting. Mr. Earle was at Cobden, where he had the largest strawberry plantation known at that time. His large experience in shipping and the losses he incurred taught him that strawberries picked in warm weather retained their natural heat after being placed in cars for shipment, and thus many were often injured or destroyed during shipment. This discovery was a turning point in Mr. Earle's successful career, for he shipped not only carloads, but trainloads of strawberries.

Mr. Earle planted peach trees largely at Cobden, Ill., but these were injured by a terrible freeze, which induced him to seek a more mild climate. With this idea in view, he moved to Roswell, New Mexico. Here he planted the largest apple orchard in the southwest, and from thence he moved to California.

Mr. Earle was president of the American Horticultural Society for seven biennial terms, was director-general of horticulture at the World's Fair in New Orleans in 1884, where he gathered one of the most comprehensive and valuable horticultural exhibits ever shown. Frank S. Earle, his son, is a collector for the New York Botanical Gardens, and also is superintending the planting of citrus groves in the Isle of Pines, off the coast of Cuba.

#### What Have We Yet to Learn About Orchard Cultivation?

In the fruit growing section of western New York, you will find various kinds of treatment of the soil in orchards. In some of these the cultivation is so thorough you will scarcely find a spear of grass or a weed. In others the orchardists do not consider weeds a serious pest. They make use of the weeds as mulch. They do not plow in early summer until the weeds have well covered the ground. Then they do not give much cultivation, but allow a full crop of weeds and grass to come up naturally. If the weeds are deficient in growth they sow buckwheat or some similar cover crop, which is allowed to remain on the surface of the soil all winter. Many orchardists would desire that this cover crop should be plowed under after it had attained considerable growth, but the orchardists I refer to claim that the best place for the covering should be on the surface of the soil, thus preventing evaporation, holding the showers so that they may penetrate the earth, and enriching the soil as well as though plowed under at the usual depth.

There are other orchardists who do not give any cultivation and allow the land and the orchard to remain in sod; but where such orchards succeed, as they do in some localities, it is where the soil is more of a sandy loam and where the soil contains an abundance of humus. No one thought of cultivating orchards sixty years ago in western New York. The soil was full of humus and would produce the finest apples without cultivation.

#### Were You Present at Creation?

The answer by men of science is that you were present, for they come to the conclusion that creation is perpetual, that it occurred before you were born, when you were born, and each day after your birth, therefore yesterday was a day of creation. We are unconscious of the fact that creation is going on around us, owing to the shortness of our lives as compared with eternity. Changes in animals, in plants, trees and vines, and in everything that grows, and in the condition and shape of the earth are so gradual and yet so persistent they may not be noticed, especially by the unobserving. But all of us can see changes in horses during one lifetime, therefore how great must be the change in the horse through millions of years, as has been actually the case, for the horse originally was not larger than a fox, and instead of a solid hoof, had five toes. Most of us can see changes in breeds of cattle during one lifetime, therefore how great must have been the change in fifty million years. We can see improvements in poultry and in the various fruits which we are growing. We do not live long enough to see great changes in the mountains, but there is one mountain which has loomed up on the plain during the present generation. We know that mountains with rounded heads are old and that those with sharp high peaks are new, and that the sharp high peaks will eventually be broken off, making the new mountain round-headed in time like its older brother.

#### Two Tons of Gold

Are you worth \$1,000,000?

Yes? Then you should be able to tell us how much your \$1,000,000 weighs, if all is in gold. Could you carry \$1,000,000 worth of gold? Could two men, or ten men, or a horse carry it? No, they could not, for \$1,000,000 in gold weighs two tons.

Are you starting out to gather together \$1,000,000 in gold? Do not commit such a foolish act. Consider how many years it would require to gather enough gold dollars to weigh two tons. Some people claim that \$1,000,000 cannot be made by any one man honestly. This is a mistake. I know of a man who has made far more than \$1,000,000 by making felt hats. His great success was owing to his making extraordinarily good hats. There are thousands of people in this country who will buy no other hats than his, thus he has gradually accumulated gold dollars until now he is in possession of considerably more than two tons of actual weight.

Did you ever hear of a man who grew trees or vines for sale who ever accumulated \$1,000,000? You will probably say that you have never heard of such wealth accumulated by a tree grower. No, there is no such individual, which proves that the mere growing of trees is not a remarkably profitable pursuit. But the growing of trees is profitable for the man who plants orchards. That is, these trees have been profitable in the past, and there is every reason to believe that they will be profitable in the future, if the tree planter buys and sets out the right varieties. If the tree planter selects only one variety for his orchard, and that variety of poor quality, he cannot expect ever to lay by for a rainy day two tons of gold.

#### The McIntosh Apple in the Boston Market

Mr. R. E. Burleigh, business manager of Green's Fruit Grower, says that early in November of last year he saw a farmer whose orchard was within driving distance of Boston, seated upon a two-horse wagon load of boxed apples.

An Italian fruit dealer (and Italians are not given credit for knowing much about varieties of apples) inquired what variety the farmer was offering.

The farmer replied that they were all McIntosh Red apples.

"What is your price?" inquired the Italian.

"My price is \$1.60 per bushel box, all guaranteed to be first class apples carefully sorted."

"What will you take in case I buy the entire load?" asked the Italian.

"If you will take the whole lot, I will sell them at \$1.50 per bushel box."

The Italian immediately closed the bargain, saying he would take the entire lot.

We have heard that apples were over plentiful in Massachusetts and other neighboring states, but I doubt whether

the man who comes into Boston with a wagon load or carload of McIntosh Red apples, Hubbardston, Fameuse (Snow apple), Banana, Swaar, Stayman's Wine-sap, Jonathan, Spy, Gravenstein, or Delicious Red would have any difficulty in selling his fruit at profitable prices. It seems to me the time is past when orchardists should confine their orchards entirely to one variety, even though the variety be as desirable in many respects as the good old fashioned Baldwin, which cannot compare in quality with those I have named above.

#### Boots

What boots it?

This expression used at the present day would mean little, but forty years ago "What boots it?" was not an unusual expression in current literature. Now in expressing the same thought, we should have to say, "What shoes it?" which would be unintelligible.

Our fathers, grandfathers and those who came before them wore boots. There are thousands of men now living who never saw a shoe made for men previous to 1874. In the good old times every house had its bootjack, an ingenious device unknown to men of the present age.

Not long ago a western man entered a fashionable hotel in New York city and blandly inquired for a bootjack. In old times every hotel would have possessed a bootjack. I hardly deem it necessary to state that a bootjack is a device designed for pulling off boots.

Boots may be described as shoes with legs extending nearly to the knees, the front and major part being made of one piece of leather.

It was often difficult to get into a pair of boots, particularly if they had been soaked with water the day previous, and it was equally difficult to get the boots off at night. In my youth, I have seen men dancing all around the room in frantic efforts to get on a pair of tight boots, and I have seen men struggling for an hour to get off a pair of tight boots.

The farmer who wore boots, invariably tucked his trousers into his boot legs. If he did not do this, his trousers would soon be frayed and soiled at the bottom. The wear and tear of farm work was so severe that even the leather legs of the boots were frequently worn through by the constant wear of walking. Let the artist or the sculptor of the future beware of representing the farmer of the past wearing shoes, or wearing on his feet anything but boots, with the trousers tucked in the tops of the boot legs.

When I was young and moved from the farm to the city, I employed a fashionable shoemaker to make me a pair of fine boots. He made them so tight, I had great difficulty in getting them on, more difficulty in getting them off, and greatest of all was the difficulty of wearing them, as I was in constant pain.

In order to indicate the force of habit, I will say that it was with great difficulty I gave up wearing boots. There is a big difference between boots and shoes, therefore no wonder that I objected to the change. Boot legs keep out the cold and wet and stiffen the ankles. I am sure that I could never have worn skates successfully with shoes. I found that the stiffer the legs of the boots, the better I could skate.

#### A Few New Fruits of Great Value

You should desire to know when a new fruit of great value is offered, for such a variety may be worth millions of dollars to the fruit growers of this country.

The Diploma currant is one of these valuable new varieties. It is a vigorous grower, a great producer of the largest red currants on record, a variety which took the highest diploma at the World's Fair at Chicago.

Sweetheart strawberry is not excelled in productiveness and vigor. It is one of thousands of seedlings produced by Mr. Burson, superintendent of Green's Fruit Farm and Nursery. You can make no mistake in planting the Sweetheart strawberry.

The Brackett peach is the finest in quality of any peach I have ever eaten, reminding me of the Niagara. It is of very large size, remarkably productive and beautiful, ripening just after Elberta. It is named after Col. Brackett, the well known United States pomologist of Washington, D. C. It was discovered by our old friend Berckmans of Georgia, which is of itself a recommendation.



**All for only 10c**

We make this offer because we want you to know Henderson's Seeds and Henderson's Service, and to obtain a complete distribution of our new catalog among those interested.



## Henderson's Remarkable Offer for 1915

TO demonstrate the superiority of Henderson's Tested Seeds, and to quickly obtain a large distribution for our mammoth annual catalog, "Everything for the Garden," we have made up a collection of six of our best specialties which we will send for 10c, along with our catalog and our "Garden Plans." This is beyond question one of the most liberal introductory offers we or anyone else has ever made.

### HERE IS THE OFFER

1. "Everything for the Garden"—our 204 page 1915 catalog. It is handsomely bound with a beautifully lithographed and embossed cover. Contains 8 colored plates and 1000 illustrations. It is a library of everything worth while for farmer and gardener.
2. Henderson's Garden Plans. There are a series of suggested layouts for your garden, and will be found to be unusually interesting and helpful.
3. Henderson's White Tipped Scarlet Radish. Of quick growth, small top, flesh white, mild and crisp.
4. Henderson's Big Boston Lettuce. A grand large cabbage head lettuce. Compact, tender, crisp.
5. Henderson's Genuine Ponderosa Tomato. The grandest tomato on earth. Magnificent size, solid and meaty, with but few seeds.
6. Henderson's Invincible Asters. Mixed Colors. The highest development in Asters. Immense double flowers, on large stems.
7. Eckford's Large Flowering Sweet Peas. Mixed Colors. A glorified new race, surpassingly superior to the older sorts.
8. Henderson's Butterfly Pansies. Mixed Colors. Largest flowers and a magnificent variety of colorings.
9. Coupon envelope, accepted by us as 25c toward any order of not less than \$1.00 for our seeds, plants and bulbs.

### Every empty envelope counts as cash

When you receive Henderson's Collection of Specialties keep the coupon envelope in which the collection is enclosed. This coupon envelope will be accepted as 25c cash payment on any order of one dollar or over. Send us 10c with the coupon below and you will receive our catalog, our Garden Plans, 6 packets of Henderson's Tested Seeds and the coupon envelope, worth 25c.

## Quality of Seeds means bigger production and increased quality of results.

The unknown quantity in your garden and on your grounds is the quality of the seeds you plant and you cannot be too careful in seeing that you obtain the best procurable.

Every packet of Henderson's Seeds has behind it the knowledge and experience of 69 years of successful seed growing and selling. Most of the best methods of seed trials and testing originated with the founder of our house, and these have been improved from year to year through three generations of seedsmen and are today still the best. Possibly as critical planters as any, in the choice of their seeds, are the market gardeners or truck farmers. As an endorsement of the quality of Henderson's seeds, we take pride in the fact that Peter Henderson & Co. supply a larger number of professional growers than any two seed houses in the world.

## EVERYTHING FOR THE GARDEN

We want to send you our beautiful new 1915 catalog—204 pages, 8 color plates, 1000 illustrations—the most complete gardening catalog ever printed. We also want you to have our valuable "Garden Plans," of which one of our customers says, "I found them of immense value in laying out my garden," containing suggested layouts for your garden, made up by men who are

thoroughly capable. We also want you to know and try Henderson's Seeds. So we have made up a package to include six packets of seeds, our new catalog, and the 1915 edition of "Garden Plans," all of which we will send you for 10c. Read complete details of offer at top of page—then send 10c with or without coupon. It is a condition of this special offer that you mention this publication.

**Peter Henderson & Co.**  
35 and 37 Cortlandt Street  
New York



### Now!

Send in the coupon or a letter, enclosing 10c, coin or stamps. You will be pleased with what we send you, we are sure. It is the best introductory offer we have ever made.

### 1915 Offer Coupon

**Peter Henderson & Co.**  
35 and 37 Cortlandt Street,  
New York

I enclose 10c for which send me your catalog, "Everything for the Garden," your 1915 "Garden Plans," and the 6 packets of seeds enclosed in coupon envelope good for 25c as explained in your advertisement published in Green's Fruit Grower.

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## Fruit Helps

By Prof. H. E. Van Deman

Associate Editor

### Midwinter Suggestions

**D**URING the cold, dry weather, when snow covers the orchards and all else of a hardy nature that is grown in the northern parts of our country, there is a chance to lay plans for the future. The past experience should be a guide to some degree as to what is best to do. It is impossible to predict with certainty what crops may or may not be the most profitable to grow, but by carefully considering the facts we ought to be able to come to wise conclusions. Seasons will often change and make differences in results, but we have to run the risks of frosts, floods, droughts and the ravages of insects and fungous diseases. These may generally come unawares and are emergencies that must be met promptly and with vigor if we succeed.

The means for fighting the frosts are becoming more and more effective, and all bulletins and other sources of information on the subject should be well studied. It may or may not be practicable to follow any of the prescribed plans in many cases, but there have been many good suggestions made on this line.

Floods can not be prevented in many sections, but the land can be so prepared that washing of the soil will be prevented in a great measure. Filling low places with brush, stones and other waste material should not be neglected; streams may be prevented from overflow, by making dams and levees that will usually keep the high water in check.

The ways to meet drouth successfully are by deep plowing, frequent tillage and mulching. It becomes the duty of the fruit grower to know how, when and where to use one or more of these means. This is where the benefits of experience come in. Certain crops may be benefited by certain treatment that might be more or less injurious to others, but on general principles it pays to plow deep before planting, and to cultivate shallow and often during the growing season. Mulching with coarse material, with some manure with it, is almost sure to help any trees or bushes. It keeps the soil cool and moist.

The insect and fungous enemies are numerous and difficult to combat, but science and practice have proved that most of them may be controlled. This is a large subject and requires great care and vigilance by the fruit grower. The books, bulletins and rural papers give much needed information. Besides these are many scientific experts employed by the state and national governments who stand ready to assist the growers with much valuable information and actual demonstrations.

Winter is the time when rabbits do the most damage by gnawing the bark and cutting the branches of shrubs and trees. Nothing that can be applied to the bark of the trees as a wash or coating will prove entirely effectual as far as I know. There are things that will prevent the damage for a part of the winter, but when snow and ice cover all vegetation, then the rabbits will attack the trees; wrapping with papers, hay or cornstalks and various other materials for a foot or more above the ground is the surest and safest way to protect the trees. Ground mice are apt to work under trash and loose snow, eating the bark of fruit trees about the surface of the ground. All grass and trash should be removed from the tree for a foot or more about the tree. Tramping the loose snow next the trunk of the tree sometimes prevents the damage from mice.

Tools that will be needed the next season may be chosen and put in before the time to use them may be needed. All repairs on the farm may be put in order during the stormy weather to avoid haste and rush in the busy season. These are some of the thoughts that come to me as I sit in the house and look out upon the snow.—H. E. Van Deman.

### Answers to Inquiries

#### Delicious Apple

Prof. H. E. Van Deman:—What can you tell me regarding the Delicious apple? I note a letter written by you and in this you speak in very high terms of this apple. Have you seen it growing here in the East, or rather fruiting here? If so, what were the quality and productiveness of the tree? Is it perfectly hardy here in New England? Is the quality of the fruit better than in the West? What I want is a first class apple suited to high class box trade.—W. L. Gladding, Mass.

Reply: There has now been time enough since the Delicious apple was introduced to prove what it will do in about every part of the apple growing regions of America. It is exceedingly rare for a new variety to meet with such general approbation. The tree is more hardy than many of the old standards and bears well. It is entirely safe to plant Delicious in New England. It is growing there now and a few of the older trees have borne a few specimens, although I do not know just who have grown the specimens. The same is true of the variety in New York, Pennsylvania and all the states from ocean to ocean, although in Virginia, Illinois and the far western regions there have been many carloads of the fruit sent to market. Those who have fruited the Delicious in the East should report their actual experience. My observation is that the apples here are not so large, but better in color and flavor than those of the Pacific Coast.

#### About Tropical Fruits

Reply to J. S. Chandler.—Sarasota is in a good part of the west coast of Florida, where citrus fruits are safe from much frost and bear good crops but the mango, papaya, sapodilla and other strictly tropical fruits are uncertain. There are periods of freedom from frosts that may last several years and it would seem that these tender trees are a success there, but when the cold comes they are killed back partly or entirely to the ground. However, it is interesting to grow some of these rare things even with occasional back-sets. By using oil-burning pots or other means of warding off the frosts when they come there may be considerable success with them.

There is one of the best nurseries in Florida at Oneco, which is near Sarasota, that can furnish plants of all the tropical fruits mentioned and many more, and there is the place to get them. My own plantings are on the East Coast and far out of the region where the inquirer wishes to do his planting. The loganberry will not succeed anywhere in Florida nor in any part of the country east of the Rocky Mountains. Consult the experiment station at Gainesville about fig culture.

#### Horse Chestnuts

Charles A. Green:—I have two horse chestnut trees. Can I have them grafted to some nuts that will be good to eat? If so, what kind will be best?—R. N. Byington, N. Y.

Reply by H. E. Van Deman: The tree that is called "horse chestnut" is a foreign species of the same genus that grows wild in North America and is commonly called "Buckeye." None of the seeds or nuts of these trees is eatable, but they are really poisonous. Nor is grafting any of the edible nut trees possible. They are too diverse in their natures to grow one upon the other.

Reply About Rare Apples, Etc.—It is likely that there are trees of Richard's Graft and Jefferies apples in bearing at the experiment station at Champaign, Ill., from which scions for grafting might

be had. Benjamin Buckman of Farmingdale, Ill., has a very large collection of varieties and may have them.

The place to send samples of choice hickory nuts is to the government nut expert or specialist, C. A. Reed of the U. S. Department of Agriculture at Washington, D. C., who will compare them with other varieties and report accordingly.

Seedlings of the common American chestnut may be had of some of the nurseries and they can be planted in nursery rows and grafted to the best named varieties later. Rochester is one of the best and Boone is another good one. Both are growing in Illinois and do well there in the lighter soils. The State Experiment Station may have trees growing from which propagating wood can be cut.

No kind of filbert will succeed in Illinois because of a blight that is prevalent in all the eastern and central states.

#### Poor Farming a Disgrace

American farming ought to pay far better than it does in most cases. The careless and unbusinesslike way in which most farms are run is a disgrace to really good farming. There is likely to be improvement in prices of farm products as a result of the dreadful World War and it becomes every farmer to do his best to grow big crops of all kinds. We will have to feed millions of people who are fighting and millions more who are cut off from about all chances of making their own living as they once did on the ravaged territories.—H. E. Van Deman.



#### Modern Methods Adapted to Tree-Spraying

Editor of Green's Fruit Grower:—Woodman spare that tree, has undergone adaptation latterly, and it's woodman save that tree, more often than not—for modern tree surgery has come to the point where there's hardly a tree, howsoever insect-ridden or blighted otherwise, but can be saved.

Ingenious methods have been devised to this purpose and not the least of these that for spraying. The insecticide for the purpose is placed in a great tank, conveniently set upon rollers, so that it may be carted where desired. At top of the tank a simple air-compressor operates with a hand-lever to one side. Jack Roosa works the handle up and down and the compressed air does the rest, sending the fumicide through a hose and then up, into a more substantial pipe, to a broad nozzle tip, which sprays it in most approved way where required. The photograph was taken near Cincinnati.—Felix J. Koch, Ohio.

#### The Lacker Apple

Editor C. A. Green:—I am greatly interested in your journal, and especially interested in the letter on old time fruits. I have a farm back in Yates Co. which has been in the family since 1802 (before Yates Co. was set off), and in my great-grandfather's orchard was a graft of apples of the most peculiar flavor I ever tasted. It was called "Lacker," as near as I can remember. It died out about twenty years ago. I would like to know if any of your readers might have some of the apples growing now. I would like to get some scions as I am experimenting with fruits here, and have several kinds of apple grafts growing from the "old place." I also wish to get some scions of a large, beautiful striped red, sweet apple (fall) that grew back there; I can't remember the name. Do you remember the small yellow apple with fine black spots, like

fly specks, all over it, the "Spice apple"? Finest flavor of any apple grown.

I have never tasted a real sweet apple here, and have asked many if they have, and they all say, "no." I should think that they would do fine here, and sell well, so many miss them.

Your very interesting articles on "Boyhood Days" and "The Old Homestead" have made me homesick. California is all right, but it ain't good old western New York by any means. Oranges, figs, guavas, loquats, etc., are good, but they don't take the place of New York apples, grapes and cherries, and I miss the gooseberry and blueberry so much.—John G. Buxton, Calif.

Reply: The large, bright red, fall sweet apple may be a Bailey Sweet, a splendid apple. I know nothing of the Spice apple. The old time orchards had each hundreds of varieties being seedlings, and some of these had local names which were never recognized by pomologists or even known to them. While I am growing several varieties of sweet apples I do not find a large demand for them. Acid apples are more wholesome than sweet ones, particularly when eaten without cooking. Everybody likes a baked sweet apple. Then there are people who like the Hubbardston and Seek-No-Further, which are mild subacid, and yet others prefer a sharp acid apple like Spy, Greening, McIntosh, Fameuse. Delicious and Senator are large red beautiful apples, mild subacid, that remind me a little of Hubbardston and Seek-No-Further.

#### A Bungalow in the Country

Green's Fruit Grower:—I would like to have the views of some of your housekeepers through the Fruit Grower columns on the size, conveniences, etc., of the average family dwelling, whether bungalow or house. We are going to build next summer, and as we are in the country, have plenty of ground room and are thinking of the all-on-one-floor house. What is the right size for the kitchen, large or small, square or narrow and long? Is a pantry desirable; its size? How about wallboard in place of plaster? I hear it does not hold or stay like plaster. Would eight-foot ceilings in a small dwelling be high enough? Is there any way to overcome dampness in a stone house? We have a world of fine building stone right on the ground, but have always understood stone houses were damp houses. Tell us about the appointments of the kitchen, windows, location of sink, range, cupboards, etc. We shall have running water to any part of the house. Would you recommend furnace heat for a six-room house? Six or seven rooms with bath is about the size we have decided upon.—W. A., Pa.

#### THREE REASONS

##### Each With Two Legs and Ten Fingers

A Boston woman who is a fond mother writes an amusing article about her experience feeding her boys.

Among other things she says: "Three chubby, rosy-cheeked boys, Bob, Jack, and Dick, respectively, are three of our reasons for using and recommending the food, Grape-Nuts, for these youngsters have been fed on Grape-Nuts since infancy and often between meals when other children would have been given candy."

"I gave a package of Grape-Nuts to a neighbor whose 3-year-old child was a weakened little thing, ill half the time. The little tot ate the Grape-Nuts and cream greedily and the mother continued the good work, and it was not long before a truly wonderful change manifested itself in the child's face and body. The results were remarkable, even for Grape-Nuts."

"Both husband and I use Grape-Nuts every day and keep strong and well and have three of the finest, healthiest boys you can find in a day's march."

Many mothers instead of destroying the children's stomachs with candy and cake give the youngsters a handful of Grape-Nuts when they are begging for something in the way of sweets. The result is soon shown in greatly increased health, strength and mental activity.

Name given by Postum Co., Battle Creek, Mich.

Look in pkgs. for the famous little book, "The Road to Wellville."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.



# Notes From Green's Fruit Farm

This is the time of the year when we cut wood for the transient help to use during the unpleasant evenings of the early spring and in the fall, when we buy and draw all the dry wood ashes and hen manure we can, prune (on mild days) apple, pear and some other hardy fruit trees, clean up and burn straggling brush and old brush piles if the snow does not hinder, secure clover seed and other seeds for spring sowing, also fertilizers including chemicals, lime, and what stable manures can be had, clean up and oil work and buggy harnesses, make up hundreds of boxes for shipping apples and pears next season, and many other little jobs and big jobs that it is well to do during the winter.

Charlie, Dewey, John, Tom and Dolly are resting at the Coney winter resort. These old horses have earned a rest and they seem to enjoy it, while four teams and one single horse are kept shod up for hauling anything that there is to haul at this time of year. This comprises lumber, manure, straw, grain, road making material, etc.

Last fall we planted one hundred apple trees in holes that had been blown out with dynamite. We shall watch the growth of these trees with interest compared with a hundred other trees set near by in spade dug holes.—E. H. Burson.

## Importance of Instructions in Pruning

Mr. F. P. Whicher, of Iowa, writes Green's Fruit Grower that he considers the articles we have published on "Pruning Orchards for Profit" the best and most helpful of all the departments in which instructions are given. This subscriber concedes the difficulties in teaching the art of pruning particularly to beginners.

I am glad to get Mr. Whicher's letter, for it offers me an opportunity to say that I have considerable material to publish on the important subject of pruning. But while much can be learned by reading an article clearly setting forth the writer's ideas as to what is the best way to teach the beginner how to prune correctly through a printed message, it is difficult to explain the art of pruning to an individual who stands by the side of the pruner for days and weeks while he is at work with the pruning saw. This is owing to the fact that one tree of the same class should not be trimmed the same as another tree of the same class, and that the pruning which would be correct for an apple or pear would not be correct for a cherry, a plum or peach. My opinion is that if the pruner feels that he does not know how to prune the tree, the best thing he can do is to omit pruning. I mean by this that ignorant pruning of a tree is worse than no pruning at all.

## Melon and Mother Apples

I am at this date, December 23rd, eating Melon and Mother apples, which are long keepers and are now at their best. It is a great pity that these two superior varieties of winter apples, beautiful in color, of good, fine, large size and productive, are, like many other good varieties, almost unknown through the country.

A subscriber sent me yesterday a box of apples, asking me to name the variety. They seemed to me to be the Melon apple. I told this gentleman that he was fortunate in having such a valuable variety of apple growing on his place. He said that it was his favorite apple, but he had never been able to have it named. You will have trouble in buying a tree of either Melon or Mother apples for the reason that there is no demand for those trees. Few people have any knowledge of them, therefore it is not advisable for nurserymen to grow the trees.

Probably trees of these varieties as grown in the nurseries are not so vigorous and upright growing as the Baldwin or Ben Davis, and this is another reason why these varieties have been neglected, although the trees in the orchard present as vigorous an appearance as almost any at Green's Fruit Farm.

Each year when I visit our farm to look over the 100 or more varieties of apples in bearing, I take great pleasure in inspecting the one tree which we have of the

Melon apple. I usually find it as I did last fall, bearing a heavy crop of beautiful reddish apples, with a long stem and a deep and attractive corrugated calyx. If apples good in quality, like Mother, Melon, McIntosh Red, could be widely disseminated it would cause the consumption of apples generally to double. When a man eats a poor apple, he stops eating apples and thinks he does not like them as well as when he was a boy. But when he eats a Mother, Melon or McIntosh Red, he smacks his lips and looks around for more. But the Mother and Melon cannot be grown as cheaply as Baldwin. The grower of these high grade apples should get nearly double the price for these superior apples as he would ordinarily for an apple of poor quality.



A subscriber of Green's Fruit Grower in sending us the above photograph of his daughter Ethel Rust of Michigan, says that the little folks in his locality have great sport during the winter tramping over the deep snow in snow shoes. We need not be told that the little girl is having a good time as the little girl expresses her satisfaction at the pleasure of snow shoes which would seem to tend to make little girls both healthy, wealthy and wise.

## The Cost of Planting an Orchard

"Tree Gold" magazine gives the following estimate of the approximate cost of planting an orchard:

"The total cost of each tree to date was approximately as follows: Laying off orchard and setting stakes, 5 cents; digging tree hole, 5 cents; tree, 18 cents; setting, 4 1/2 cents; screening, 6 cents; total 38 1/2 cents."

I consider the above as an excessive estimate of the cost of planting an apple tree. The writer has estimated that it cost 5 cents to mark out the place where the apple tree should stand. This cost of \$2.50 per acre can be largely decreased by my plan followed at Green's Fruit Farm, which is as follows: The line is marked both ways with an ordinary corn marker. Then select the rows which are the distance apart you desire the apple trees to be placed. Select a row running the opposite way, the same distance apart, and you have the location of the first row. Other rows can be located and staked by the same method, but in reality no stakes are required, as the crossing of the marker indicates where the tree should be planted. It does not cost us at Green's Fruit Farm 5 cents for digging the hole for a tree.

It is unusual to protect the trunk of the tree at planting time with a screen of wire or veneer of wood. This work of protection against mice and rabbits can be done at a more leisurely time, but when it is done it should not cost 6 cents each, as a sheet of veneer large enough for a small tree costs only 1 1/2 cents.

"Tree Gold" estimates that it costs 38 1/2 cents to buy a tree and plant it in the orchard, whereas at Green's Fruit Farm I estimate that it only costs us 25 to 30 cents, but the condition and character of the soil in which the planting is done make a difference in the cost of planting an apple tree.

## Cutting Back Tops of Pear Trees

During a visit to Green's Fruit Farm yesterday I noticed particularly that both standard and dwarf pear trees were severely cut back at the tops. I mean by this, the new growth each year had been cut back to within from four to six inches of the base of the new growth of the past season. I was told by the foreman that the best way to get large sized Kieffer pears was to cut back the trees as indicated above. But he says that all varieties of pear are made more productive and made to produce larger fruit by cutting back the new growth severely at any time when the trees are dormant; that is, without leaf. This method of pruning keeps both standard and dwarf trees greatly reduced in height, which is desirable for many reasons, making it easier to gather the fruit and easier to prune and spray, and the trees can be set more closely together. Our foreman considers this cutting back of pear growth a very important feature of pear growing. While it is somewhat new at Green's Fruit Farm, having been discovered by cutting off the new growth in order to get scions or buds for budding, the method has been practiced for many years by a large pear grower, Thomas Bell of Rochester, N. Y.

## Apples in a Year of Plenty More Profitable than Potatoes

Mr. Johnston, a large Pennsylvania apple grower, writes Green's Fruit Grower that he wholesaled apples this past year of plenty and of war at 35 cents to 40 cents a bushel, which he considers a very low price. In selling them by the bushel, he was at no expense for barrel or other package. I am inclined to the opinion that even at 35 to 40 cents per bushel, apples will pay a better profit than potatoes at the same price, and I regard 35 to 40 cents per bushel for potatoes about the average price.

I estimate that more apples can be grown upon an acre than can be grown of potatoes. Ordinarily there are 50 apple trees on each acre; if these respective trees averaged five bushels per tree, the yield per acre would be 250 bushels, which is considered above an average crop yield for an acre of potatoes. But an acre of good bearing apple trees will yield far more than 5 bushels per tree. I have a tree, not very large, which has yielded 36 bushels in a year. Ten bushels per tree would not be an extravagant yield, which would be 500 bushels per acre, which is far beyond the average yield of potatoes.

You can get some idea of the productiveness of an acre of bearing apple trees as compared with an acre of potatoes by imagining the potatoes dug and left on the surface of the ground, and the small showing they would make as compared with all the apples on an acre of apple trees if shaken from the trees and left lying upon the ground.

Now let us compare the expense of caring for an acre of apple trees, picking and marketing the fruit, as compared with growing and caring for potatoes and marketing them. The cultivation and care of an acre of apple trees would be much less than the cultivation and care of potatoes. There would be no time spent in digging or hoeing an acre of apple trees. The expense of gathering and marketing the two crops would be very much the same.

The trouble with most fruit growers and farmers is that they do not know what the various crops cost them or what the profits are on the output crops; this is one reason why most people are unconscious of the fact that they are making more money at selling apples at from 45 to 50 cents per bushel than they are at selling potatoes at the same price.

## C. A. Green's Letter to a Colorado Friend

Dear Friend:—Thanks for the beautiful specimens of the Senator apple. Your section and other sections of the west can beat us in the color of the fruits. I see that you like a mild subacid apple after the type of the Hubbardston or Seek-No-Further, which is somewhat the type of the Delicious and Senator. Others like an apple of more pronounced tone like the McIntosh.

While Delicious is beautiful in color and

shape I do not consider it as good in quality as Winesap or as McIntosh Red. It is more after the style of Stayman's Winesap, which is mild subacid. But as regards quality of apples, each person must have his own particular fancy, some liking a sweet apple, some a mild subacid, and some a sharper acid if the quality is aromatic.

The editors of rural publications have a gigantic task before them in making known to the people of this country the peculiar qualifications of the different varieties, not only of apples but of other fruits. Here in the east the great majority of people are limited in knowledge of varieties to the extent of the Baldwin, Greening and Spy. As regards Mother, Melon, McIntosh, Banana, and even some of the better known varieties such as Hubbardston and Seek-No-Further, or Spitzenburg, they have no knowledge.

And in distribution of fruits there is a big task for some one or many. I do not doubt for a moment that if apples were distributed as well as California oranges are and with as much intelligence, we would hear but little about gluts in the apple market. I know from experience that mankind like apples. They are almost crazy after them. What a pity that they should be ignorant of the finer varieties and that they should not be able to get apples at a reasonably low price in a year like this. At my club I am asked almost daily where a barrel of Spies can be secured, and I have to tell them I do not know. If I tell them I have McIntosh or Banana, that is all Greek to them. Nothing but Spy is wanted.

I have been trying for years to get the various state experiment stations to issue bulletins after the style of the Idaho bulletin, printed on one side, regular editorials ready for publication. One of our New York state experiment stations has promised to do this. It would multiply information a hundredfold if all would do it.

Mr. Charles A. Green:—On the table I am writing upon lies Green's Fruit Grower. A journal from my old home looks good to me, and I have been looking over its pages.

On Page 11 you have a picture of "Johnny Applesed" and an article on this interesting personage.

My name is not "Applesed," but I am wondering if I am looking at my grandfather's picture, for history says, "Peter Sheffer planted the first apple orchard in all the region from the Genesee River to Fort Erie (or Buffalo), from the seed."

This orchard was planted on his farm on the banks of the Genesee at Scottsville, on what later was known as the "Tom Brown Farm." My grandfather settled there in 1789, and in 1889 in a hickory grove on this farm was celebrated the one hundredth anniversary of the settlement of the Genesee country.

History also records that the frame house built by my grandfather, now standing on the old Sheffer farm, was the first built in all that region.

Thinking perhaps this information would interest you, as establishing the first orchardist and nurseryman in the Genesee Valley, and tendering you further information about this historical character (my grandfather), I beg to remain Allen R. Sheffer.

Editor's Note: I recall the Sheffer farm. Here the Shaffer raspberry originated, introduced by me later.—C. A. Green.

## Linseed Oil Not Successful in Grafting Wax

Ambrose J. Moyer of Pennsylvania informs Green's Fruit Grower that he used the ordinary form of grafting wax and his grafts succeeded, but those grafts on which he used grafting wax containing linseed oil were an entire failure; therefore, he does not approve the use of linseed oil in grafting wax.

## Testimonial

Evansville, Ind., Oct. 15, 1914  
Green's Fruit Grower:  
I am more than pleased with your publication. It is certainly the best fruit journal published.—Edward M. Schelosky.



"There is the most accessible automobile in the world"

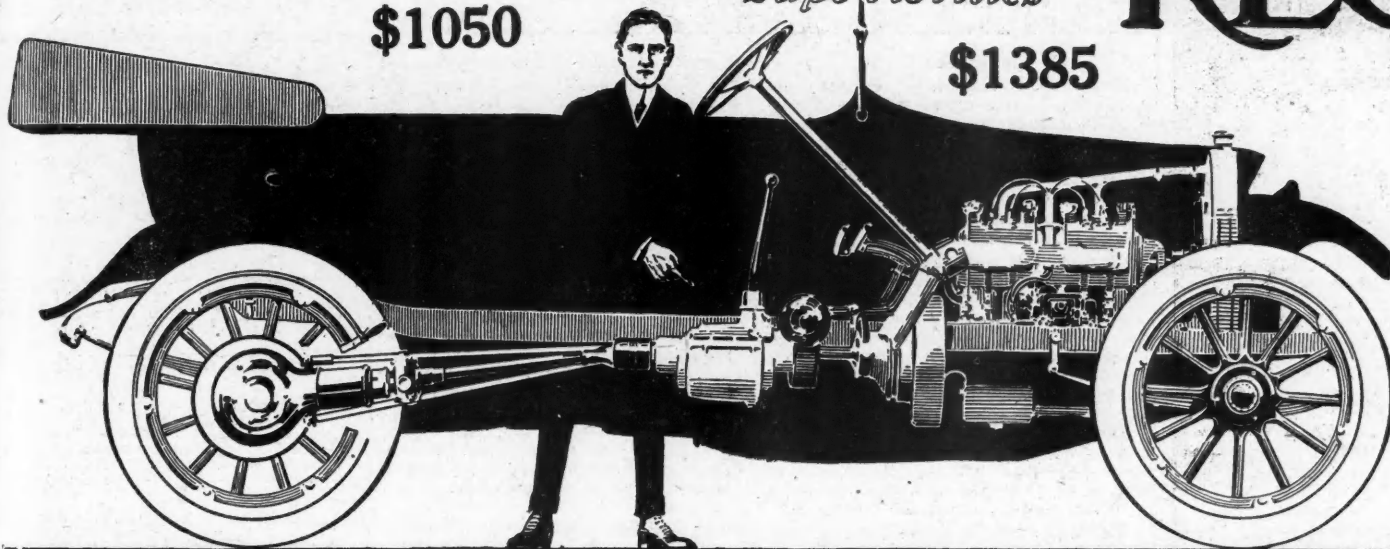
THE NEW REO—The Fifth—  
The Incomparable Four

\$1050

THE REO SIX—  
The Six of Sixty  
Superiorities

\$1385

REO



That statement applies with equal force to the New Reo Six and to Reo the Fifth, "the Incomparable Four"—for in this respect all Reos are alike

THE 3-UNIT POWER PLANT which always has been and always will be a feature of Reo automobiles, makes this the most accessible automobile in the world.

REO ENGINEERS INSIST that the only excuse for the 2-unit chassis is that it is easier and cheaper for the manufacturer—while it is obviously less accessible and, therefore, more expensive to the owner.

YOU KNOW THE TYPE WE MEAN—that in which the transmission is incorporated in a kind of annex to the motor or the rear axle in such a way that in order to make an adjustment or repair to one unit you must disturb two complicated mechanisms.

A PROMINENT REO DEALER, who also handles another make of car of much higher price, was recently asked why it was that his repair shop was always full of the higher priced cars while a Reo was so seldom seen there, though he sold so many more Reos.

"IT ISN'T SUCH A BAD CAR," he replied. "In fact it is a mighty good car as cars go. But it is so inaccessible that when anything does go wrong it takes so all-fired long to fix it."

IF YOU HAVE PAID—as doubtless you have many times—a five dollar "repair" bill for what you felt ought to have been a five cent adjustment, you will appreciate that.

"ACCESSIBILITY"—'twas a word to conjure with in ads a few years ago. For most of the things you did to a car in those days had to be done while lying on your back. So, when a designer could so arrange the units that you could take a more comfortable position—as kneeling or lying on your side!—its "accessibility" was loudly proclaimed.

BUT WHEN THE TERM CEASED to be novel most makers dropped it. And then they forgot also to design the quality into their cars!

NOT SO THE REO ENGINEERS. Several years ago the Reo chassis had been standardized and perfected to a point where we believed—and still believe—it will require no radical change for a long time to come, if ever.

AND ALL THE EFFORTS—all the engineering knowledge of the Reo organization, from that time, has been concentrated on the improvement and the refinement of that standard Reo chassis in one direction—greater accessibility.

FOR WE BELIEVE it is the paramount consideration in an automobile. We believe nothing so directly tends to reduce the maintenance cost of a car as that quality of accessibility.

STUDY THIS FEATURE in Reo cars. You'll find it isn't simply an advertising phrase—it's a fact. Go over the entire car—each unit separately and note the vast amount of attention and care that has been exercised in the direction of simplicity and accessibility.

ANY ADJUSTMENT or repair can be made to any unit without disturbing any other.

WHY REOS ARE THE ONLY CARS in which main crank-shaft as well as connecting-rod bearings can be adjusted without taking the motor out of the car. Patented feature—strongly protected.

EVER TRY TO ADJUST your steering gear—to take up wear? Ever get anywhere in the attempt? Yet they all call them "adjustable." Now, study the Reo steering mechanism—it's so simple the average person never notices it. And owners tell us they almost forget there is one on the car—so seldom does it require even the slightest attention. It's self-adjusting—automatically. Accessible too—look and see if it isn't!

AND, DO YOU KNOW, some makers who are now copying that "Always Reliable" Reo steering gear used to laugh at it! Such is the reward of leadership.

AND THAT BRINGS UP another matter—a detail of Reo policy. You know, the Reo engineers never adopt anything just because it is new—not unless it is better. Nor do they discard a feature of proven excellence just to supplant it with a more conventional one.

BUT TO RETURN to our subject—Accessibility:

Most makers seem to overlook or to ignore the fact that it's one thing to assemble and adjust parts when the chassis stands stripped on the factory or garage floor—but it's an entirely different matter to do it when the parts are covered by the body above and the drip-pan below—with immovable dash directly over the place which, perhaps, you most want to reach.

DOES THAT LAST PARAGRAPH bring up memories that are more poignant than pleasant? Thought so. Then you'll derive real joy from the possession of a Reo.

AND SIMPLICITY. Don't be deceived by a smooth-looking casting. Looks simple—but may conceal a mess of inaccessible gears and bearings and traps. Get into it and make sure.

LOOK TO THE CLUTCH—can you get at it without taking down both motor and transmission—or is it hermetically sealed inside that "simple" looking annex?

DIFFERENTIATE between that which is really simple and that which is only "simple looking." Between Accessibility with the body on—and what the dealer has in mind—the Accessibility of a stripped chassis—or a motor on a special stand. There's a world of difference.

AND THAT REMINDS US of another Reo dealer—one of the most successful. He advertises "don't buy a Shop Service Car—buy a Road Service Car—Road Service built in at the factory."

ASKED WHAT HE MEANT by that, he said: "When I see too much emphasis laid on 'Shop Service' in advertising a car I opine that that car must be so built it will need plenty of it. I have watched it and found I was generally right."

REO ROAD SERVICE—built in at the Factory—that is our strong point—that and simplicity and Accessibility, so that, when any adjustment or repair or replacement must be made you can do it easily, anywhere with ordinary tools—and at the slightest cost.

ALL THE EXPERIENCE—all the ingenuity—all the skill—of the Reo engineers have been concentrated on this one idea for several years—simplifying design always with greater accessibility in view.

AND WE ARE MOST PROUD of the result. Ask any Reo owner—and the longer he has owned his Reo the more enthusiastic will you find him. He will repeat the words that head this ad.

The New Reo the Fifth, \$1050

The New Reo Six, \$1385

REO MOTOR CAR COMPANY, LANSING, MICHIGAN

Manufacturers of Reo Automobiles and Reo Motor Trucks



## Lowest Prices Ever Made On World's Best Roofing

**Lighting-Proof, Fire-Proof, Rust-Proof—Lasts as long as Building Stands**

Your roofing expense will ease when once you have laid Edwards Tightcote Galvanized Steel Roofing. Cost per square lowest ever made. No upkeep cost. Always beautiful in appearance. Reduces cost of fire insurance.

### EDWARDS EXCLUSIVE Tightcote Process

Makes Edwards Metal Shingle, Metal Spanish Tile, Edwards Roo Steel Shingle, Grip-Lock Roofing, Pressed Standing Seam, or Roll Roofing, Ceiling, Siding, etc., absolutely rust-proof. Not space of a pin-point exposed to weather.

### HOW TO TEST GALVANIZING

Take any other galvanized steel bend it back and forth several times, hammer it down each time. You will be able to find out great scores of galvanizing with your fingernail. Apply this test to Edwards Tightcote Galvanized Steel Roofing—you'll find no flaking.

### Interlocking Device

Prevents Warping, Buckling or Breaking. Protects Nail Holes through under layer not exposed to weather. No special tools or experience needed to lay—anyone can do the work—lay over old shingles if you wish.

### GARAGES \$69.50

Lowest price ever made for Steel Garages. Set up any place. Postal brings 64-page free catalog. Size: 10 foot wide, 14 foot long.

### Ro Steel Shingles Cost

Outsides 3 Ordinary Roofs. No matter what kind of a building you have in mind there is a style EDWARDS Tightcote Galvanized Steel Roofing exactly suited to your need.

### Freight Prepaid

Lowest Factory Prices. Greatest roofing proposition ever made. We sell direct to you and save you all in-between dealers' profits. We cannot quote prices here but if you will send for our

### FREE Roofing Book

It will show you that our prices are lowest ever made for World's Best Roofing. Postal brings Free Samples, Prices and Roofing Book No. 24.

### The Edwards Manufacturing Co.

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We are the Largest Makers of Sheet Metal Products in the World

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A sample 1915 model "Ranger" bicycle, on approval and 30 DAYS TRIAL. Write at once for large illustrated catalog showing complete line of bicycles, tires and accessories, and particulars of most generous offer ever made on a bicycle. You will be astonished at our low prices and remarkable terms.

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## Farm Department

### Trees on the Farm

How cheerless is the home without trees about it. It is a mystery to me how a man can make himself a home and set down seemingly contented, without first planting out some trees for shade and ornament. Trees judiciously planted add wonderfully to the attractiveness and value of the home and farm, says Farm, Field and Fireside.

On many farms there are waste corners here and there that could well be set to trees that would in the course of a few years be a source from which to get an occasional bean pole, fence post or other stick, and finally, if nut bearing trees were planted a fine lot of nuts would be produced; the basswood by the industry of the bees would furnish the table with the very nicest of honey; or if, in the case of the sugar maple, sugar of which there is none to equal it could be made; and during all this time the trees would be growing into valuable wood or timber.

Sometimes we even find a farm whereon no fruit worthy of the name exists. Why can this be? Is it not the strangest thing in the world that a home owner should fail to have a supply of fruit, for home use at least, right from his own trees and vines? Almost the first thing a man should do on taking possession of a home of his own, is to set out some fruit trees and plants and continue to set something almost every year; even after he gets to be old, for it will make the farm dearer to the children and grandchildren; therefore the writer thinks that a man should never consider himself too old to set out trees; even if he should never eat the fruit thereof, it will be a good monument to his memory.

### A Novel Plan for Laying Out a Farm

A certain corporation or company desiring to make a marvelous exhibition of the layout or plan of a farm to be exhibited at the Panama-Pacific Exposition has asked the editor of Green's Fruit Grower for ideas or plans.

My suggestion is that often it is a mistake to locate the farmhouse, the farm barns and other buildings close to the highway or at one side or at one end of a large farm. Consider what a saving there would be in hauling manure, hay, grain or fruits, if the buildings were located in the center or near the center of the farm. But most important of all consider how much more beautiful the location for the buildings would be if placed in or near the center of the farm, provided there was a rise of land in the center of the farm suitable for a building site.

The most beautiful palace and the most modern in its appointments that I saw on an extensive trip through Europe, was that of the Duke of Westminster, which was located in what might be termed the center of a large farm. There was a winding road leading from the main highway to the castle. At the rear and on both sides at a proper distance were beautiful shade trees, and nearer the building at the rear were the flowers. In front was the spacious lawn embracing many acres.

If the house and buildings are centrally located on the farm, a field of five, ten or twenty acres could be made to take the place that the extensive lawn takes on the Duke of Westminster's grounds. These acres of lawn could be made to produce a good hay crop every year and still be an object of beauty. An apple orchard could be located at one side of the house in place of the forest trees planted by the duke, and at another side of the dwelling an orchard of peach, pear or plum trees could be introduced, so you see that a very attractive home could be made without the loss of the use of land by locating the buildings in the center of the farm. Think of the pleasure of driving in and out of such a farm daily, the roadway winding through crops of corn, wheat, rye, oats, barley, or through apple orchards or peach orchards or a vineyard.

### Influence of the Moon on Animal Life

Mr. C. A. Green:—I have been reading the several opinions expressed in the Fruit Grower regarding the moon's influence. There is no question in my mind that the moon has a magnetic influence on all life both animal and vegetable. I have never had any personal experience with the effects of the moon on vegetation, but I have always heard it said that pole beans planted in certain times of the moon fail to climb up the pole, that all root crops should be planted when the moon points down, and that vines and all crops growing above ground should be planted when the moon points up. I do know from experience that the moon affects animal life. Any old hunter or trapper will tell you that in the new of the moon all animals and birds are shy and wary and that it is a very poor time to hunt or trap. When I was a young man pheasants were very plentiful, and I was very fond of hunting them. An old hunter told me never to hunt pheasants in the new of the moon, always in the dark of the moon. He said that in the new of the moon they are so wild you cannot get near them, while in the dark of the moon you will almost step on them before they fly, and I have found this so. Also in fishing at night with spear or setting hooks for eels, you might as well stay at home on moonlight nights for you will get few fish.

I was at one time an attendant in one of the wards of a hospital for the insane. Another man and I had charge of 34 patients. Ordinarily these patients were quiet, sitting around seemingly in a despondent mood, but just as soon as a new moon appeared every patient became restless, alert, pacing back and forth, some becoming quite violent. This was especially marked in the case of one patient who was perfectly rational at other times, but became violent during every new moon and had to be placed under restraint. After the moon became full, he would quiet down. This was known and talked of by the physicians and others in the institution. I believe the moon affects every one, especially those who have any ailment. I think any physician who has been at all observing, will tell you that his patients are more nervous and irritable during the new of the moon than at other times. I believe every one is so affected, but that those who are well do not notice that it is in the new of the moon when they feel nervous and irritable. I am going to make some experiments and take some observations on the effects of the moon on vegetation next summer and will report the result later.—Geo. W. Hayman, Pa.

### Land Mortgage Banks.

Editor Green's Fruit Grower:—Read article in your paper in regard to the building of libraries, cottages and endowing colleges by benevolently inclined people, which no doubt is a very good plan to comfort and assist a great many people to obtain pleasure and good homes.

I have a suggestion to make, and that would be for those who are inspired with benevolence to organize land mortgage banks or associations and loan the money, at a low rate of interest and long time, to bona-fide settlers in a new country. If this were done it would endow more homes and would do more real good than endowing colleges, building libraries, etc. The proceeds could be given to such institutions and would be a constant source of revenue to them. This would make many happy homes, more of the young people would be able to attend the colleges, obtaining higher education than they possibly could do without the loan to develop the farm.

There are hundred of families who with a little money could develop their land and would soon become prosperous and happy. The security would be of the best and growing better each year, and with a long time loan at a low rate would work wonders. Let some one take it up.—A Subscriber, Wisconsin.

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O. D. is non-poisonous, has no odor, but kills all odors. Guaranteed to KILL all Germs, such as Typhoid, Diphtheria and Pus Bacteria. O. D. has been thoroughly tested by some of the leading Bacteriologists in the profession, and pronounced one of the BEST on the market.

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Shrubbery, Plant Life, Gardens are attacked by parasites and vermin which spread with lightning rapidity. They eat away the vitality of the tree, swiftly destroying leaves, foliage and bark. Tomato, potato, lettuce and other vegetable and flower plants suffer equally from the ravages of various insects. Heretofore, the farmer has had to use paris green or other dangerous and expensive drugs. In MILLER'S O. D. DISINFECTANT, hundreds of horticulturists and farmers have found a safe remedy that is both inexpensive and sure. Twice daily they sprinkle or spray all infested plant life with a solution of O. D. Disinfectant. After repeating for several days, all insects disappear and the plants quickly recover a healthy appearance.

### FOR THE FARM

In the barns, out-houses, stalls, pens, cesspools, dairy and other places where needed, a solution of O. D. Disinfectant, one to 100 parts of water will keep air and surroundings sweet and clean.

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Cleans the mouths of cattle with a solution of one ounce to the gallon and for the feet, use two ounces to the gallon of water. Either wash or spray, will positively prevent this disease when used.

2 gallons will dilute 100 times in water. Price \$5.00. Money back guaranteed.

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SEE for yourself the many uses  
**DETROIT FARM ENGINES**  
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CHEAP,  
EFFICIENT  
DETROIT  
FARM  
ENGINE**

It is no longer necessary for the farmer to be an expert engineer because this engine has no intricate collection of valves, cams, gears, sprockets or cranking devices. There is absolutely nothing about the Detroit which can get out of order, and a half grown boy can run it as well as anybody else.

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An engine which is designed to use only gasoline cannot be run satisfactorily on any other fuel. Three gallons of kerosene can be produced in the same time that it requires to make one gallon of gasoline. So it stands to reason that gasoline may at any time advance in price while kerosene will cost less and less every year. So why buy an engine which uses only gasoline when you can have a Detroit Farm Engine which is designed for, and runs successfully, on kerosene. Also remember, the Detroit is not a gasoline engine with "kerosene fittings," but an engine

built to run on kerosene, alcohol, distillate, or gasoline—just as you prefer. Furthermore, it uses but one pint of fuel per horse power hour.

The saving in fuel cost in a month's operation of the Detroit, will pay your lubrication bill for a year.

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This engine will grind your feed, saw your wood, make perfect electric light, churn butter, separate milk, pump water, mix concrete, operate hoists, truck feed, shell husks and shell corn, run your grind stone, lathe or drill press, run washing machines, shearing machines, threshing machines, and practically any type of machinery around the farm. It will also elevate grain into silos.

No matter what your need may be you will find just the correct engine in the Detroit line to do the work easily and satisfactorily. There are six sizes

All the drudgery has been taken out of farming—all the back-breaking effort is a thing of the past. And now—with considerably less effort—the farmer can more than double his profits, and find time for recreation with his family and friends.

The man who is engaged in farming for profit no longer questions the fact that he needs a reliable farm engine for a score of different uses every day in the year.

But the early farm engines were great, massive, cumbersome things, weighing nearly one thousand pounds per horse power. They were complicated and costly. Even when they were finally installed on the farm it required the services of mechanics to keep them in order and—as a consequence—only the well-to-do farmer could consider such equipment. These days, however, have gone once and for all.

In place of the clumsy, heavy engine (which needed two or more horses to drag it around) we have the compact, ever reliable

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It is not necessary to take our word for the performance of the Detroit Farm Engine. Your neighbors and fellow farmers will tell you what it is doing—what it has done—and what it can do. Ask us for our book of satisfied customers and recent testimonials.

We issue large and instructive catalogues on farm engines, farm machinery, and farm electric lighting plants. We will be glad to send copies of any or all on request.

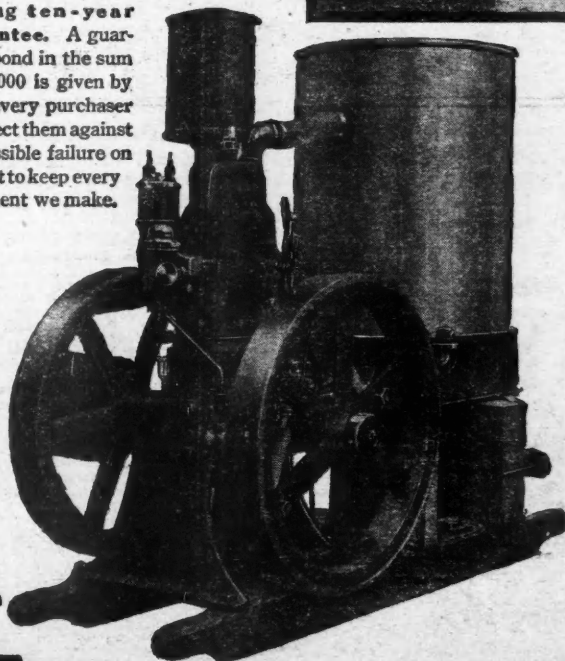
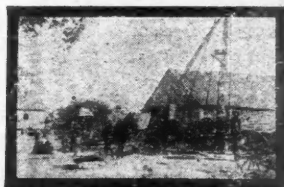
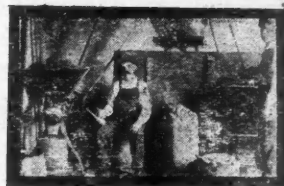
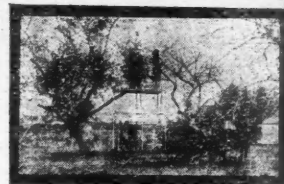
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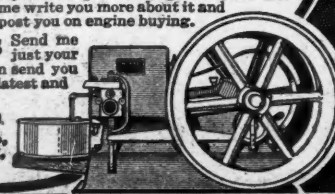
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**Subscribers who change their residence will please notify this office, giving old and new addresses.**

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### Currant Grown in Tree Form

John H. Doller of Michigan sends us the photographs below of tree currant, so-called, for the reason that the plant is trained to one stalk or stem which takes the place of the trunk of a tree. Notice that these currant trees are heavily laden with large and beautiful clusters of red currants. Mr. Doller says that his neighbors and friends take great interest in this novelty as they have never seen a currant growing in tree form. Doubtless there are few of our readers who ever saw a currant tree. Perhaps you can imagine how beautiful a little tree will look as shown in the photograph laden with

homes and to increase their wealth by the planting of fruits. I wish you many years of prosperity.

### Frozen Vinegar

Green's Fruit Grower:—In your October number under the title "Making Cider Vinegar" you say, "Vinegar will make in almost any temperature." Two years ago I made a large barrel full of apple juice and left it in the granary to do what it would. I have no doubt that the stuff froze during the winter, and again during last winter. It now smells like vinegar and tastes like small beer gone sour. Vinegar in any sprightly use of that term it certainly is not. It is a disappointment altogether and I have attributed its poor quality to the freezing to which it was subjected. Is my surmise correct or not, and is there anything that can still be done to make poor vinegar into good?—Inquirer, Mass.

Reply: Freezing is injurious. Do not permit freezing.

### Manure the Orchard

A great many farm orchards have been left in sod for many years and are in sod at the present time. Many are cultivated each year and the crop taken off the land, says Farmer's Guide. In most cases no effort has been made to keep up the fertility of the soil. Apples are as profitable as any crop grown on the farm. If the trees are not taken care of, a farmer has no reason to expect that they will give good yields. You do not expect hogs and cattle to thrive without regular feed, and just as truly the trees will fail if you starve them. The only difference is, that because of a store of food in the earth, trees will live a long time between feeds. This is so true that young trees growing on rich land need no feed until after the fruiting years begin. But after a tree has borne three or four crops, it will be much less vigorous. The leaves will be smaller and of a lighter color, and they will be noticed to drop quite early in the fall. The leaders will make but slow growth, perhaps none at all, where a few years earlier they extended ten or twelve inches a year. The difference will be noticed in the size of the apples, for they will be small and imperfect.

All these changes are danger signals. Your trees are feeling the exhaustion of starvation. The remedy is manuring, and nothing is so cheap as the barnyard manure for it contains nitrogen, ammonia and the organic matter which the soil needs to restore its primitive condition. Do not feed in a half-hearted way, for when a tree feeds only once in eight or ten years it needs a good big feed. Manure applied at the rate of 15 to 20 loads per acre is none too heavy.

### An Old Friend

Mr. C. A. Green:—I have been having Green's Fruit Grower since 1886 and I will renew it; it is a good journal. I will plant small fruits when I see what to select.

I have only one eye, and that the left one, since I have been operated on.—John Andrew, Mass.

Reply: Please accept thanks for your great kindness in mailing me a Fruit Grower dated September, 1897. I have many subscribers through the country who, like you, have been reading what I have had to say. I have endeavored to do a good work and believe I have done so by causing people to beautify their

Vegetable growers say they prefer acid phosphate to basic slag. The latter is all right for long-season crops. Prof. Lippman says that acid phosphate hastens germination of seed, increases resistance of young plants to injurious organisms and makes a better root system.

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# Applying the Spray

Sprays are preventive and not curative, and must therefore be applied before the injury becomes apparent. After a fungus has gained entrance to the foliage or fruit, it can not be reached and the diseased parts made sound again; but the infection may be prevented by coating the parts with a fungicide, such as lime-sulphur solution, which prevents the germination of the spores. Similarly, the codling moth may not be poisoned after it has burrowed into the fruit, but if the poison has been put into the calyx cavities before the calyx lobes have closed, and has been sprayed on the foliage and fruit before the latter is entered by the larva, the destruction of the latter in large numbers is insured. Successful spraying, therefore, must be based on a knowledge of the diseases and insects to be controlled. The work should be done in advance of their expected appearance in the orchard.

There are two principal reasons why spraying in the hands of some is unsatisfactory, namely, failure to make the applications at the proper time and failure to thoroughly coat the trees and fruit with the mixture. In order to overcome the former difficulty the orchardist must be informed as to the nature of the malady or insect to be treated, and the latter may be overcome by maintaining proper equipment and by giving the necessary attention to thoroughness in spraying.

In the operation of spraying the liquid should be broken into a very fine mist. The

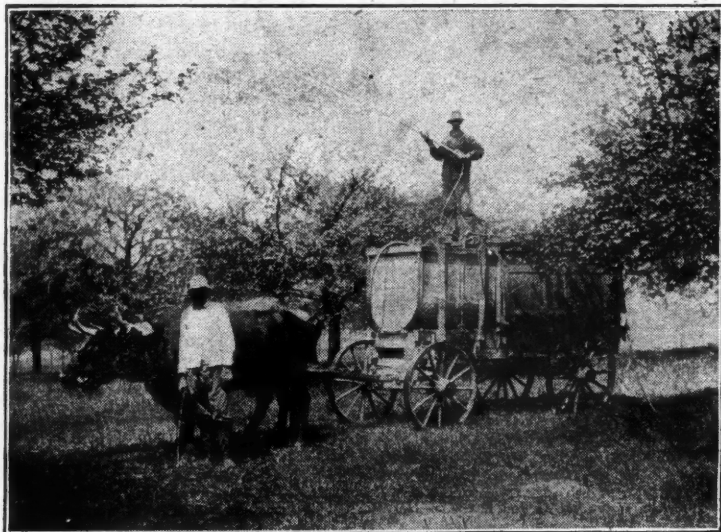
tivity of spray required per tree. This information is not only an index to the thoroughness of the spraying that is being done, but is especially useful in arriving at an estimate of the amount of spray chemicals to be purchased.

The quantity of liquid to be used on trees and foliage naturally varies with the size of the tree. For orchards just coming into bearing and with average-sized trees 8 to 10 years old, a proper manipulation of the nozzle should insure thorough spraying with 3 or 4 gallons per tree. For average-sized trees 12 to 15 years old, the amount of spray required per tree would be from 5 to 7 gallons, and for older trees a larger quantity will be required, all varying with the size of the opening in the nozzle used and the rapidity with which the work is done. Very old trees of considerable height and spread of limbs often require from 10 to 15 gallons per tree to insure a thorough treatment.

## Order Trees Early

Ordering the trees is a matter which is often neglected until a short time before the trees are actually needed for planting, says American Cultivator. This is a serious mistake. One should decide upon the varieties and the number of trees to be planted, and the trees should be ordered not later than February, but not to be shipped during freezing weather.

Do not order trees from an agent who



Spraying apple orchard near Wolcott, N. Y.

nozzles should be so manipulated that every part of the foliage and fruit shall be uniformly covered with fine dots of the spray. It is not necessary that the foliage and fruit should be actually coated with the spray, but every portion should be thickly peppered with it. The higher and inner portions of the tree are commonly insufficiently sprayed, and while the liquid may actually be dripping from the lower branches the upper parts of the tree may show little of the spray.

The desired mistlike spray can ordinarily be secured only with high pressure at the pump. This pressure should be not less than 100 pounds, though this is not ordinarily obtained except with gasoline or other power outfits, which should supply a pressure of 125 to 150 pounds. When hand pumps are used the pressure should be maintained as high as practicable, and never less than 75 pounds, in which case good nozzles become more essential for perfect work. To maintain this pressure will require constant hard work, and the tendency will be to allow the pressure to lighten. Except in spraying the tops of trees, the nozzle men should never ride in the wagon, even while spraying the smallest trees. In order to reach the inner branches and the under side of the fruit and foliage the operator must spray from the ground, where he is free to walk around and under the trees. Many failures result from attempts to spray trees from the wagon as the outfit is being driven by.

The question is frequently asked, especially by persons not much experienced in spraying, as to the proper quan-

represents a firm of whose reliability you are not certain; and it is better in any case to order directly from the nurseryman.

Trees are graded by nurserymen in two ways—by height and by caliber. The height is measured, from the point where the tree was budded, and the caliber is the diameter of the trunk three inches "above the bud." The latter is the more accurate and better system of grading.

Have your trees shipped to arrive a considerable time in advance of the day or week in which they are to be set, and "heel them in." You will then have your trees at hand ready to set when the conditions for planting are best.

As soon as the trees arrive from the nurseryman, they should be unpacked to note their condition. If the trees are dry, the roots should be placed in water for a time until the bark on the trunk and the branches of the trees regain their full, bright appearance. If the soil is in workable condition when the trees arrive, they should be taken to the proposed site of the orchard and pruned and heeled in. They will then be near at hand when needed for planting.

## Knew It Was Some Vegetable

An old farmer once desiring to purchase a watch, went into a jewelry shop. On being asked what he wanted, he replied: "I want a watch eighteen onions fine." "You mean eighteen karats fine, don't you?" enquired the jeweler. "Wa-al," replied the farmer, "I knowed it wuz some kind of a vegetable."

## Plant the Peach that Pay Quickest

**Hottes Elberta Peach Pays \$195.00 only 28 Months after Planting**

Almost \$4.00 per tree—this is the marvelous record of just 50 of our celebrated Moncrief Pedigreed Hottes Elberta in W. C. Price's orchard, Cowley County, Kas. Plenty of records show this great "find" of fruit world is grand surprise and success in any peach climate—early crops of beautifully tinted, firm and golden fleshed delicious fruit that is almost twice as large as the old Elberta, and brings 25 to 50 per cent more on the market. Hottes Elberta ripens early, bears heavy and regularly—is an exceptionally long keeper, a splendid shipper, unexcelled for canning. Hardy in bud and wood. A sure, safe, quick money-maker for every orchard. Be first in your section to plant this early bearing wonder.

## JAPAN DREAM—The Tomato Peach

Moncrief 44 perfect peaches four months after planting in orchard of William Royce, Cement, Oklahoma. 100 peaches from one tree 15 months after planting reported by J. R. Smith, Sweet Springs, Missouri. Youngest-bearing, heaviest fruiting peach ever discovered. Guaranteed to bloom first year and bear second year unless season is unfavorable. Extra hardy variety. Bears early when good peaches are scarce. Fruit a beautiful red, fine quality, free-stone. Pays quicker profits than any other peach. One year after planting you can count on Japan Dream bearing just like your Tomato vine—equally heavy—equally early.

## Send For The Book That Tells How It Was Done

Get the Moncrief Orchard Book—right away—now—before you get another tree. It's a book every fruit-grower should have. Tells all about these wonderful, quick-bearing peaches, how they are propagated, grown and developed into trees that pay a profit in less than two years from planting. Not only that, but you will find the Moncrief Orchard Book pay the way to more certain and quicker orchard results. It tells all kinds of fruit, for the great book tells a lot about the Moncrief way of producing trees that bear out of the ordinary, bear heavy, bear better fruit and more regularly. Describes all Moncrief strains of standard and new, new better paying fruits. It's a most valuable book for any farmer, orchardist or market-grower. Get it before you plant this year. No charge, just send your name.

WINFIELD NURSERIES, J. Moncrief, Pres. - 1003-4 Park Street - WINFIELD, KANSAS

## The "Deyo" is the Best Power Sprayer Built

If you are a grower for market you know you've got to spray or accept cull prices for your fruit, and if you haven't already bought a sprayer you know you will have to do so or lose far more than its cost on next season's crop alone. As a shrewd, level-headed business man when you spend your money you want it to buy you the best sprayer there is—real, practical, tested sprayer value. All we ask is that you



Equipped with a Deyo Engine that can be detached quickly and easily and used for other purposes.

## Give Us An Opportunity to Prove It—

that the "Deyo" is the best power machine. We will send you full particulars by return mail, including pictures of the machine. WRITE TODAY so you will have time to study it over. Used and endorsed by biggest growers in the country.

DEYO-MACEY SALES CO., 42 Washington St., BINGHAMTON, N. Y.

Also builders of Deyo Engines in all sizes.



## For All Fruit Spraying, Use MODOC SPRA-SULPHUR COMPOUND

**Dry Sulphur Made Soluble in Powder Form Dissolves Instantly in Warm or Cold Water**

Three years' experience of Fruit Growers and Agriculturalists in the famous fruit belts of the Great Northwest proves

**Modoc Spra-Sulphur Compound the Most Effective Spray for San Jose Scale and practically every form of scale and fungous disease.**

**Modoc Spra-Sulphur Reduces Freight Charges over 80%** Don't pay freight on water. 100 pounds of Modoc Spra-Sulphur makes more concentrated spray material than a 50-gallon barrel weighing 600 pounds.

Modoc Lime-Sulphur contains 33% active ingredients

Tests at 33° Baume  
Pure Lime  
Pure Sulphur  
Pure Water



Made under the Hite Patents

Modoc Spra-Sulphur contains over 95% active ingredients

Less than 5% inert ingredients, including moisture

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Packed in air tight drums, it can't leak; is more easily handled; stays in solution; keeps indefinitely; leaves no sediment; doesn't clog the nozzle; sticks like paint; and penetrates more deeply, making a more effective spray.

We manufacture both MODOC SPRA-SULPHUR and Modoc Lime-Sulphur Solution. We advise MODOC SPRA-SULPHUR because we believe it is more efficient, more convenient, and more economical.

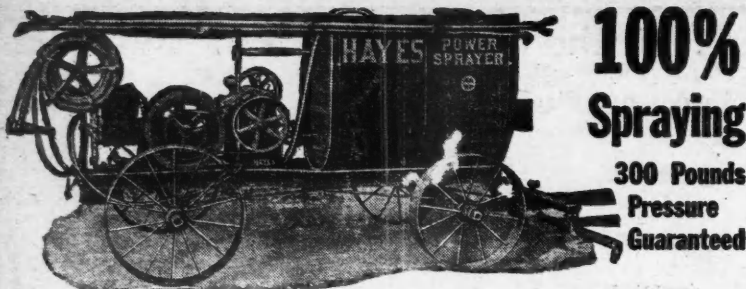
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All Hayes Power Sprayers are guaranteed to maintain 300 lbs. pressure.

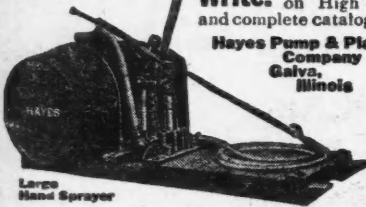
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Large Hand Sprayer



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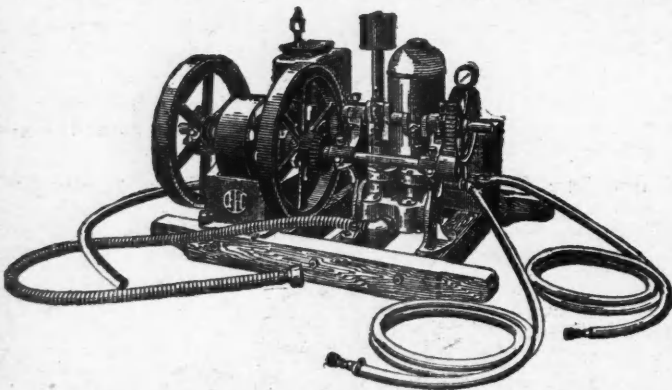
Joy. The best and most prolific Blackberry.  
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MY CATALOG No. 1, an illustrated book of 64 pages, tells all about them and describes, with prices, all "the good old varieties" of Small Fruits as well. It gives also full instructions for planting with cultural notes, and tells about the giant Jumbo raspberry that I am giving away. It is free.

For 36 years a specialist in  
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**A**MONG your fruit-raising problems, if you are a really painstaking grower, seeking to gain your just profits at shipping time, is the spraying problem. Many a veteran fruit grower and truck gardener will assure you that you are not yet doing your best against the insect and fungous pests if you are not using

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This is because in all International Harvester spraying equipment you find the Titan engine—a long lived, most satisfactory engine; and thoroughly well built pumps, completely brass fitted and made for high pressure spray work.

I H C outfits are made for small and for large orchards, in several types—on skids, on portable truck, and complete with tank. You can detach the engine easily for any power work.

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## Care of the Old Home Orchard

WHAT SPRAYING WILL DO



As you go through the country, north, east, south or west, you will find many farms with well-kept fences and buildings, well-bred live-stock, and well-tilled fields; but as a rule you will find the old family orchard entirely neglected or probably used as an adjunct to the pasture, says The Farmer's Guide. This condition would not be so general if the owners had the proper conceptions of the needs of the orchard. Some think that the trees need no attention. Although the trees used to bear abundantly, they will tell you that "the variety has run out," or "the soil is too thin," and it is useless to expect them to bear any more. Such men should learn of what is being done in such orchards by the experiment stations, and progressive orchardists.

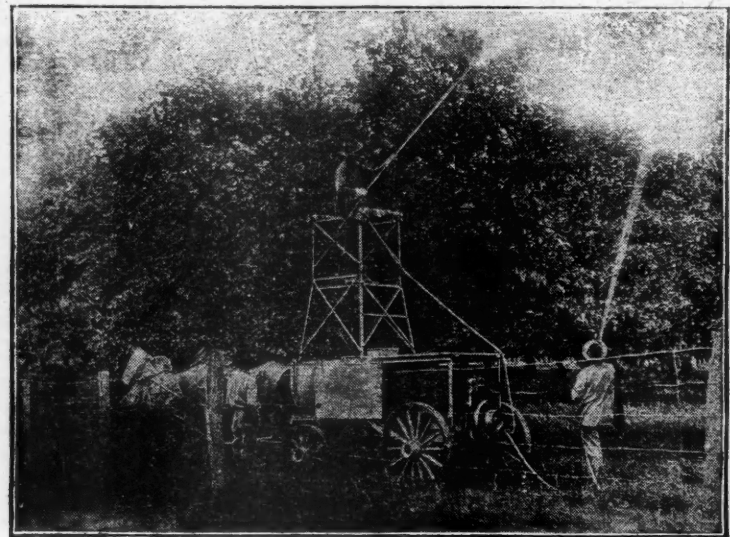
Others have the mistaken idea that the time and trouble taken in caring for the trees will not be repaid in the harvest. The most important spraying should be done during the busiest season for the farmers in the corn belt, viz. about May first, and it is not an easy task to get the farmer to take time from his planting operations to spray his orchard, when he has little faith in the outcome. With average conditions he will be ahead financially if he plants five acres less corn, and

in a barrel of water, so that the crystals are just covered. When the sulphate is dissolved, add four pounds of freshly-slacked lime, and dilute to fifty gallons. Then strain the mixture before using, and keep it well agitated until it is applied.

Another excellent fungicide is the lime-sulphur solution which destroys the scale. But for summer use, it must be diluted with forty gallons of water to each gallon of the commercial solution. This is easily prepared and produces excellent results. Fortunately for the orchardist, the arsenate of lead and lime-sulphur solutions when diluted mix readily, and they are safely applied together. It is well to use both whenever either is needed, as the extra cost is only that of the material.

### COST OF SPRAYING

Taken as a basis for figuring, I have a four acre apple orchard, 15 years old, all Winesap and Arkansas Black. As this orchard is hardly large enough for a power sprayer, and too large for a hand outfit, we compromised by rigging up a power outfit of our own, which saved nearly \$100.00 on first cost and answers the purpose admirably. Below I give a table of expenses incurred, which will give a fair estimate of what it will cost to produce



A formidable spraying outfit and crew.

takes the time to care for thirty or forty old trees.

Many farmers are anxious to do something for their trees, but they do not know how to proceed. Some seem to think that the work is of a complicated nature, and requires much study and preparation before it can be properly done. It is true that one should know what to do, and why he does it, but this knowledge may be easily attained and applied by the average farmer.

After the buds burst open it is too late to use the strong lime-sulphur solution to destroy the scale, as the spraying solution will destroy the tender leaves also. However, a soluble-oil such as can be bought on the market, may be used at this time to check the spreading of any scale if present. It is quite difficult to eradicate the scale by summer spraying, because the foliage gives them a much greater surface to spread over, and it is very hard to get them all on every leaf.

Besides the scale insects, the chief insect enemies are the canker-worm which eats the leaves, and the codling moth, whose larva is found in every wormy apple. These insects may be controlled by spraying with lead-arsenate, which comes in a paste form. Use three pounds of the paste to fifty gallons of water.

The principal diseases of the apple or any orchard fruit are caused by various forms of fungi. Probably the worst disease, as well as the most prevalent, is the apple scab. The various rots and blotches all come in the same class, and may all be controlled by using a good fungicide. The Bordeaux mixture, made of a solution of lime and copper-sulphate, is very good. It is made by suspending a burlap bag containing four pounds of copper-sulphate

100 bushels of apples from this orchard. If 200 bushels are produced, the cost is lowered some, but the more fruit raised the more expense incurred in handling. If some unforeseen circumstances occur and the crop is a total failure, then the orchardist is out his money for another year. This outlay must be charged up against future crops, if he is to reckon correctly on profit and loss.

Interest on \$100 spraying outfit for one year at 3%.....	\$ 3.00
Deterioration of same including wear and tear one year.....	10.00
2 bbls. lime-sulphur solution.....	19.00
100 lbs. of arsenate of lead.....	10.50
Labor spraying 3 times (1 driver, 2 men to handle hose).....	18.00
Picking 100 bushels.....	5.00
Hauling to packing shed.....	.50
Sorting, grading and packing 100 bushel boxes.....	10.00
100 boxes including freight.....	15.50
15% commission for selling 100 bushels at \$1.60 per bu.....	24.00
Cost of hauling 100 bu. to market.....	2.00
Paper for lining boxes.....	1.60
Nails for 100 boxes.....	.45
Cost of setting up and making 100 boxes.....	1.00
<b>Total expenses.....</b>	<b>\$120.55</b>

Credit by 100 bushels apples sold at \$1.60 per bushel..... 160.00  
Expense..... 120.55

Net profit on 100 bu. fancy apples \$39.45

West Bingham, Pa.  
Mr. Charles A. Green—I consider Green's Fruit Grower the best farm paper published. Frank Johnson.



## Disk Before Plowing

and after plowing. This method of tillage leaves no clumpy strata under the seed bed to cut off subsoil connections—to cut off crop yields. With

### Cutaway (CLARK)

Double Action Disk Harrows you can practice this method without extra cost. They double cut every inch; they leave the land level; they are light draft; they save at least one horse and one man; they cost surprisingly little; and there's a size for every farmer!

Rigid frame; Dust-proof bearings; Disk forged shays.

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## Planet Jr. Wheel Hoe Cultivators

do the work of three to six men—do it better, give bigger results, and last a lifetime. Fully guaranteed.

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The highest type of Single Wheel Hoe made. Light, but strong, and can be used by man, woman or boy. Indestructible steel frame.

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Stronger, better made, and capable of a greater variety of work than any other cultivator made. Non-clogging steel wheel.

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Gives bigger better results than any other one-row cultivator ever invented. Strongly constructed; easily handled. No wood used except for break pins.

72-page Catalog (168 illustrations) free. Describes in detail over 55 tools, including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard- and Beet-Cultivators. Send postal for it now.

**S. L. ALLEN & CO.**  
BOX 1107G PHILADELPHIA PA.

## How to Cut When Pruning

Written for Green's Fruit Grower by M. Robert Conover

It is most important, when pruning, to leave unbroken the meeting line of bark and wood. Carelessly done with a tool that rips the edges of the bark away from the wood beneath, it prevents the formation of new bark over the edges of the wound.

The reason for this is easily understood. The active, sap-carrying, wood-forming, bark-making tissue lies snug between the outer bark and wood. This tissue depends upon its close connection with the wood and bark for its form and protection from water and excessive sunlight, so that it may perform its work.

When a limb is sawed off and the tool loosens the edges of the bark layers so that they curl away from one another—the drying power of air and sun and the penetration of water prevent their adhesion by drying out the mucilaginous parts. Every rain causes water to penetrate deeper, and growth and life in these tissues cease and the parts decay.

Such injury will often extend for eighteen or twenty-four inches down a limb to a point where normal conditions favor a healthy formation of bark.

A good sharp trimming saw should be used, and the bark on the side of the limb



The photo shows old cut mostly healed over, and pruning shears which we offer with Green's Fruit Grower for two years, all for \$1.00.

opposite the direction of the cut should be severed first. (This means cutting first the under side.) When a limb is held by a mere shred of bark just before it drops, its weight must drag away the bark from the wood, causing unnecessary injury.

Small branches should be cut with long-handled clippers, and especially those upon trunk and limbs, as a careless tearing away of these may leave scars that do not heal and which invite injurious visits from insects.

(Editor's Note. Where the limb is large, we often cut it off 4 feet from the body of tree, then saw it off again closely, but not so closely as to cut off the bulge of collar, thus needlessly enlarging the wound.)

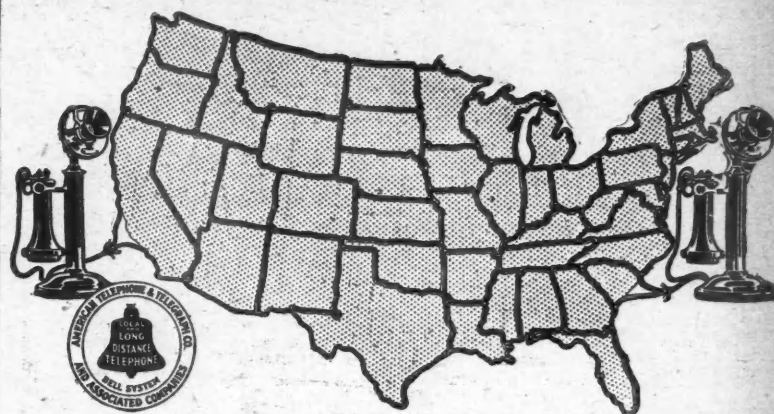
### Melon Apple

Mr. C. A. Green:—Am sending you a basket of a favorite apple which we prize very highly. If you would kindly tell us the name, as we have never known what was the name of them.—Hoyt Strunk, N. Y.

Reply: I have compared your apples with the Melon apples grown at Green's fruit farm and find them almost identical in appearance and flavor, therefore I think yours is the Melon apple.

Melon and Mother are similar. You are lucky to have a tree of this variety, which is one of the best apples the world produces and yet perhaps not the most profitable apple. It could not be grown and sold at the same price as Baldwin. Nurserymen offer no trees of Melon apple for sale, and if we had them for sale probably could not sell them as they are so little known, yet it is an old variety.

## The Telephone Unites the Nation



At this time, our country looms large on the world horizon as an example of the popular faith in the underlying principles of the republic.

We are truly one people in all that the forefathers, in their most exalted moments, meant by that phrase.

In making us a homogeneous people, the railroad, the telegraph and the telephone have been important factors. They have facilitated communication and intervisiting, bringing us closer together, giving us a better understanding and promoting more intimate relations.

The telephone has played its part as the situation has required. That it should have been planned for its present usefulness is as wonderful as that the vision of the forefathers should

have beheld the nation as it is today.

At first, the telephone was the voice of the community. As the population increased and its interests grew more varied, the larger task of the telephone was to connect the communities and keep all the people in touch, regardless of local conditions or distance.

The need that the service should be universal was just as great as that there should be a common language. This need defined the duty of the Bell System.

Inspired by this need and repeatedly aided by new inventions and improvements, the Bell System has become the welder of the nation.

It has made the continent a community.

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES**

One Policy

One System

Universal Service

## SPRAY Signs of a Good Sprayer

High Pressure—to throw a strong, fine spray.  
Pump—of sufficient capacity under slow speed.  
Agitator—to keep liquid well stirred.  
Strainer—Cleaning—to avoid clogging and choking.



### The "Ospraymo" Line

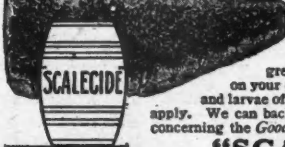
of automatic sprayers are down to the moment. Power is ample. They throw a fine spray, under high pressure, which reaches every part of leaf or tree. You are not troubled with nozzles choking, the most annoying thing in spraying. Ask any user. You go right along without delays—when the job is done, it's done right. Automatic Brushes with Mechanical Agitators are furnished with Empire King Barrel Pump and Watson-Osraymo Potable Sprayers, also with all LEADER Gasoline Engine Machines.

**We Make a Sprayer for Every Need—**

from Bucket and Knapsack Sprayers to the large Power Orchard Rigs. Sold by leading dealers. Ask for Field's "Ospraymo" Sprayers. Write direct for catalog, formula and spraying directions.

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## One Barrel of "Scalecide" Will Spray as many Trees as Three Barrels of Lime Sulfur



"Scalecide" has greater invigorating effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the Good Results from Using

**"SCALECIDE"**

Send for our illustrated booklet—"Proof of The Pudding". Tells how "Scalecide" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book and also our booklet—"Spraying Simplified".

Our Service Department can furnish everything you need for the orchard at prices which save you money. Tell us your needs.

We are World Distributors for VRELAND'S "ELECTRO" SPRAY CHEMICALS and Arsenal of Lead Powder (33 per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations. H. G. PRATT CO., Mfg. Chemists Dept. F 50 Church Street, New York City

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**For any Size—Direct from Factory**

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

**\$24 BUYS THE NEW BUTTERFLY**

No. 3 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 90 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

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You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save half. Write TODAY.

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**Albaugh-Dover Co., 2156 Marshall Blvd., Chicago, Ill.**



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**AMERICAN CREAM SEPARATOR**

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

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**The "Wool Fat" Man**

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**Save Your Horses Save Your Cows**

A postal brings it, postpaid. All you need to do is simply say, send me your big can of Corona Wool Fat on 20 days' FREE trial. Use all or part of it—test it on one or more animals suffering from cuts, wounds or sore feet of any kind. If it don't do all I claim—if you don't feel perfectly satisfied after the test you won't owe me one penny.

**HEALS WITHOUT A SCAR**

**Corona Wool Fat**

I make this liberal offer simply to prove before you pay that Corona Wool Fat is the greatest healing preparation for horses and cows you ever used.

is now used by more than 1,000,000 stockmen, horse owners, blacksmiths and farmers. It causes no pain, no blistering, no scars. Stops inflammation—cures QUICK. The only remedy that will penetrate a horse's hoof and take out soreness. Will grow a new hoof.

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Simply write me, giving your name and address plainly and I will send you this big can postpaid, by return mail. All I ask is, if satisfied after 20 days' trial, that you send me 50c. If not satisfied, write and say so and you won't owe me one cent. Do it today. Mention advertisement you intend to use it on.

**C. G. PHILLIPS, Mgr. THE CORONA MFG. CO. 15 Corona Block, KENTON, OHIO**

Corona Wool Fat heals Quarter Cracks, Sand Cracks, Grease Heel, Thrush, Corns, Mud Fever, Contracted Feet

It heals Barb Wire Cuts, Sore Shoulders, Old Sores, Ulcers, Wounds, Sore Teats of Cows, takes out the soreness of inflamed udders.





## Dairy Talk

Whatever serves the cow's comfort or peace of mind promotes production. Think this over, then whenever there is an untoward disturbance among the dairy herd, note the results. One or two does will be strong enough to convince the most skeptical that any and everything that disturbs the cow's peace of mind results in a down hill production.

Kindness, calmness and good temper are as essential in the herd as are good feed and water in abundance, and as essential as is cleanliness and politeness in caring for and marketing the dairy products.

In short, be a true gentleman in all dealings with both the cows and the customers.

No man has determined the limit of decrease in cost of producing and increase in quality and quantity.

The economy of ration depends not upon the actual cost of feed per day, but upon the cost of producing the pound of milk or butter.

If the increase of production keeps ahead of the increase in cost of feed, you are on the right track; as soon as the balance shows a stoppage of the increase then it is time to halt and make a thorough investigation.

Know your cows. How many do? Very few. I am afraid that many know just what and how much each cow returns. Give the cows a fair show, then if they fail to make a fair showing, either you have poor cows or else there is a leak about the feeding, the caring for, cream or butter, or a wrong way of marketing.

You must solve the problem, using the scales of justice, then eliminate the leak or leaks, just as soon as possible.—Inland Farmer.

### PEOPLE MET IN THE WOODS

#### Bull Moose and Black Bear Where They Live

Amid such conditions, which awaken even human senses from their long sleep, the animal is at home, and his ability to hear and to locate sounds is beyond belief. For example, You select a little, unnamed bog or pond, and go there after sundown for moose calling (Go alone, leaving rifle and all murderous thoughts behind, if you want to see a moose unafraid.) Around you stretch endless barrens, lakes, streams, forest—an unmarked wilderness, in which one might lose a city. You call, once, twice; and from the mountain behind you, miles away, comes like a ghost of a sound, a faint quoth! And it is the bull's answer. Now go home without another sound. At daylight you will probably find your moose not only on your little bog, which is as a pin point in the vast expanse, but within a few yards of the thicket where you were calling.

With such senses to guide him, to tell him of your every turn and step as you go blundering through the night, no wonder that the animal grows serenely confident. Even the black bear, more timid than deer or rabbit, sheds something of his aloofness when dusk falls and his nose and ears become as penetrating searchlights. Ordinarily he avoids you, and, if you meet him unexpectedly, his every action says: "I do desire that we may be better strangers;" but if you enter his territory quietly, without frightening him, he will sometimes draw near to question you in the friendly darkness.

Once, on a canoe journey, I made a belated camp, having passed the sunset hour and crossed a large lake in order to sleep at an old camp-ground of mine. The night was cold, the moon shining clear and full when I arrived at the familiar place. I repaired the old commoosie, made a restful bed of fir boughs and was thinking of supper when, across the bay, two bull moose started a mighty rumpus, bellowing, smashing brush, clanging their broad antlers like metal blades as they charged each other savagely. I paddled over in my canoe, ran close to the fighting brutes, and watched until one drove the other out of sight and hearing. When I returned it was too late to hunt wood, so I turned in to sleep without lighting a fire. The splashing of a large trout in the shallows, and the wild call of a bear, heyoo! like a person lost and demented, were the last sounds I heard.

A man in the open sleeps lightly, and while resting seems in some subconscious way to keep track of what is going on. Suddenly, I was wide awake, every sense

alert, as if some one had touched me with a warning finger. Behind the great log that lay, as a threshold, across the open front of the commoosie something moved; a shadow rose up; and there, sharply defined in the moonlight, stood a huge bear. His forefeet rested lightly on the log; his head was raised, his body drawn back to its utmost tension; eyes, ears, nose—every sense and fiber of him seemed to question the sleeper in intense, silent wonder.

To have started up quickly might have been bad for one of us, so I lay stock still. Presently he glided away, but I knew that he was not satisfied. Without a sound I reached for my heavy revolver, gripped it, and lay exactly as I was before. In a moment the bear's head reappeared at the opening; like a shadow his body moved into the moonlight, and again he raised himself on the log for another long look. He probably smelled me, as I certainly smelled him, rank and doggy; but a sleeping man, like a sleeping animal, gives off very little scent, and Mooween's inquisitiveness had overcome his natural timidity. He had a beautiful skin, with its early, velvety fur that rippled and gleamed where the moonlight touched it; but he had come to my camp from curiosity, and it seemed a greedy and atrocious thing to kill him just for his skin; at my own door, too, when he stood timidly looking in. Besides, a dead animal is no longer interesting, and I wanted to know what he would do.

Once he turned away, only to return quickly; then there was something in his motion which said that he dared no longer trust himself or his neighborhood. As he disappeared a second time I peeked around the corner of the commoosie. Straight away he went to the edge of the clearing, where he turned and sat upon his haunches, rocking his great head up and down, sniffing the air. Then he stood up full height on his hind legs, looking enormous among the shadows, dropped again to all fours, and vanished silently in the woods. A moment later I heard him smashing off at a headlong run.—The Independent.

I hear the wind among the trees  
Playing celestial symphonies.  
I see the branches downward bent,  
Like keys of some great instrument.  
Longfellow—"A Day of Sunshine"

### Asphaltum for Peach Tree Borers

In a recent bulletin of the California station E. L. Morris calls attention to the use of hard asphaltum, grades "C" and "D," for the control of the peach-tree borer. This material was applied early in the spring to badly-infested trees from which the borers had been dug.

It was found that a thick, heavy coating prevented both the issuance and the entrance of about 95 per cent. to 98 per cent. of the insects, the degree of efficiency depending upon the thoroughness of the application. Asphaltum does not penetrate, crack, deteriorate or bind the tree, since it yields to the slightest pressure. Four years of experimenting have not shown the least injury.

The material is applied warm with a brush from five inches below to five inches above the ground. It is easier to apply two or more coatings than to try to put on more at one time than will adhere firmly. The first coating will harden very quickly and the second can be applied without loss of time. Two coatings are generally sufficient unless the bark is very rough. But in any case a thick, uniform covering is absolutely necessary for the best results.

Borers are seldom uniformly distributed over an orchard. Small blocks of trees here and there may be badly infested, and the most of the orchard comparatively free from the pest. In such cases it is not necessary to treat all of the trees with asphaltum, but it is necessary to examine them carefully, for in no other way can the true conditions be known.

A convenient way to handle the asphaltum is to mount an iron kettle on the running gear of an orchard truck and suspend beneath it a sheet-iron apron as a firebox. Keep hard asphaltum in the kettle all the time, so that the melted asphaltum will not get too hot to carry in small containers, and apply directly to the trees.

2140 Lunt Ave., Chicago, Ill.  
Green's Fruit Grower—There is more information in your magazine than in all the rest put together, and we appreciate it highly.—W. Zeller.





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### Tree Supports

Written for Green's Fruit Grower by  
C. H. Trott

When a large limb is likely to split from the parent trunk at the crotch, it is a good plan to rivet the member to the stronger stalk. Choose a new bolt, twice or three times the diameter of the branch, and drive it through a square of board several inches across or a chunk of tin the same size. Then drive the bolt through the limb, far enough from the crotch to be useful. Screw a nut on each end of the bolt. Now do likewise with the main trunk, only enough farther up on the stem for a wire connecting these bolts to uphold the limb when loaded with fruit. The wire twisted around the bolt, inside the nut should be stout enough, and be so perfectly secured, to withstand the wrenching storms of years.

Another method, and one appealing to a greater number of orchardists, is to loop the wire around the branch, below one of its stout laterals, and the other end around the trunk, farther up, and above some branch higher up, to prevent the loop from slipping down. The loop should allow room for limb and trunk to grow.

In many cases these devices have proved more satisfactory than propping with poles.

### Stay on Farm Campaign

The United States Government, seeing the necessity of better farming and greater contentment of people on the farm, has begun a campaign called "Stay on Farm Campaign." The main idea which occurs at present is that by improving the rural school, well-to-do people may be more inclined to remain on the farm. We know that many leave the farm in order to educate their children in cities. If they can get better educational facilities on the farm, they may be induced to remain there.

Other improvements will be suggested later. Undoubtedly the rural church will be made more effective in bringing young and old together frequently, and the schoolhouse will be open more often for various purposes.

Altogether this plan of the Government may result in beneficial changes. Farming and farm life have received too little attention by our Government. Annually we are told how important farmers are, and that the combined output of farmers exceeds that of any other business, exceeding the value of railroads or any manufacturing corporation, and yet but little money has been expended for agricultural or horticultural advancement. We have come to look upon the nice things said to farmers at the state fairs as political buncombe, words of praise or seeming appreciation which are intended mainly to catch votes.

Much has been added to the pleasure of living in the country by rural free delivery, the telephone, improved roads and automobiles. Anything that can be done to make farming more profitable will be a strong inducement for keeping the boys and girls as well as the old folks upon the farm.—C. A. Green.

Ready money works great cures.—Danish Proverb.

### Sheldon Pear and Its Origin

The Sheldon is one of our oldest pear varieties, and has an interesting history. It was first propagated in Western New York, but the seed came from Dutchess county. A local historian gives these facts concerning the origin of this fine pear variety:

"Roger Sheldon moved from Connecticut and settled in the town of Huron, Wayne county, near Wolcott, in the year 1809. On their way the family stopped over night in Dutchess county, N. Y., at the home of a Judge Johnson, some fifteen miles east of Poughkeepsie. While there the judge brought in a basket of pears for the family to eat; and while eating them Mr. Sheldon remarked that as they were going to a new country, they had better take the pear seeds along and plant them.

"The seeds were carefully saved, carried to the new home, and planted. From them sprang a little nursery. As the trees grew, they were sold and scattered about the settlement, and though all sprang from pears taken from the same tree, some produced pears only fairly good, other fruit hardly fit to eat. Six trees bore fruit very nearly alike, and of excellent quality." These six were the original Sheldon pear trees.

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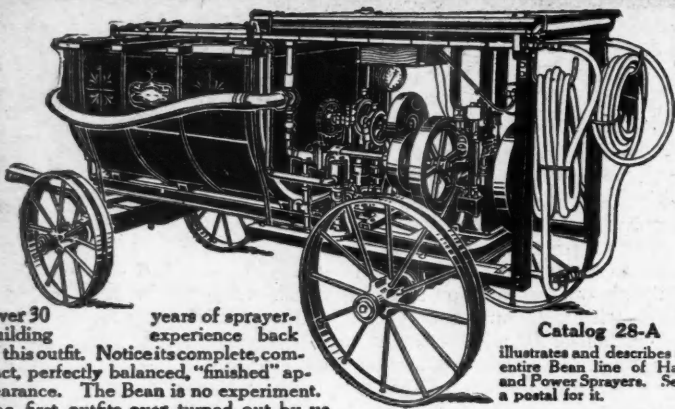
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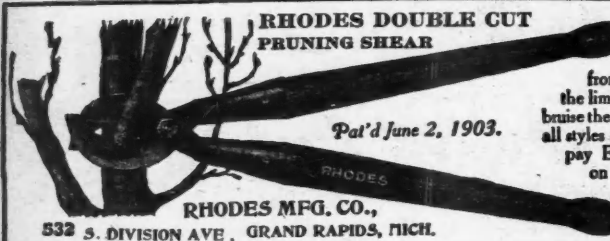
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## Farmers Find Profit in Rhubarb

Written for Green's Fruit Grower by FELIX J. KOCH

**L**ATTERLY the farmers in many of the prairie sections of the states are taking to raising rhubarb in quantities never dreamt of before. Whole acres stretch away—all in the stately rhubarb; the big spreading leaves curving out from a crimson stem that would seem to tempt to tear off and munch, then and there. America, it would seem, has awakened to a realization of the goodness of the rhubarb pie or boiled rhubarb as never heretofore; while, in addition to its uses as a food-product, rhubarb still holds its own as a staple on the druggist's shelves.

In that connection, some interesting facts attach to the plebeian rhubarb.

"Rhubarb," one who knows it best relates, "has been used in medicine from very early times, being described in the Chinese herbal, which is believed to date from 2700 B. C. The name seems to be a corruption of Rheum Barbarum, or Reu Barbarum, a designation applied to the drug as early as the middle of the 6th century and apparently identical with the name given by Dioscorides, described by him as a root brought from beyond the Bosphorus.

ing the drug across the whole breadth of Asia and the difficulty of preserving it from the attacks of insects, rhubarb was formerly one of the most costly of drugs. In 1542 it was sold in France for ten times the price of cinnamon and four times that of saffron, and in an English price list, bearing date of 1657, it is quoted at 16s. the pound—opium being at that time only 6s. and scammony but 12s. the pound.

"Rhubarb is used in medicine as a mild purgative, promoting digestion and improving the appetite when given in small doses, probably by stimulating the intestinal secretion. It is especially valuable in the treatment of certain catarrhs with jaundice, and in certain skin diseases it has proved to be a valuable medicine, the results obtained being probably due to certain chemicals it contains."

Nevertheless, rhubarb holds its own with the lover of the pastries aforesaid, and so long as rhubarb pie holds its place, in season, on the bill-of-fare of the American people, rhubarb will be certain to find steady market and hence be raised at no little profit, by farmers, the country across.



Big field of rhubarb. Stalks sell for pies and sauce, roots used for medicine.

"It is certain that in the early part of the 11th century, Chinese rhubarb was distinguished as superior to all others. In the 14th century, rhubarb appears to have found its way to Europe by way of the Indus and Persian Gulf, to the Red Sea and Alexandria, and was therefore long described as East Indian rhubarb. Some also came by way of Persia and the Caspian to Syria and Asia Minor, and reached Europe from the ports of Aleppo and Smyrna, and so became known as 'Turkey rhubarb.'

"Subsequently to the year 1653, when China first permitted Russia to trade on her frontiers, Chinese rhubarb reached Europe by way of Moscow, and in 1704 the rhubarb trade became a monopoly of the Russian Government; in consequence of which the term 'Russian' or 'crown rhubarb' came to be applied to it. All rhubarb passed through the hands of the Government inspector, acting under the instructions of the Russian Minister of War, and all pieces except those of good quality were rejected. Hence 'Russian rhubarb' was invariably good and obtained a remarkably high price. This severe supervision led, naturally, as soon as the northern Chinese ports were thrown open to European trade, to a new outlet being sought, and the increased demand for the drug at these ports resulted in less care being exercised by the Chinese in the collection and curing of the root; so that the rhubarb they offered rapidly dwindled in quantity and, after 1860, Russian rhubarb ceased to appear in European commerce. The drug, from that date, became known as 'Chinese rhubarb,' although the older names still continue in domestic use in England. Owing to the expense of carry-

### Trend of Civilization

"It is very interesting to remember that the birthplace of the apple tree is also the birthplace of the Caucasian race and that wherever the white man has moved west, he carried the apple tree with him. The apple tree in its march with civilization typifies the advance of the white race, its original friends in its native home.

"God gave us a wild crab," writes Rev. W. B. Pickard, of Cleveland, O., "then he put into us what was infinitely better than the perfected apple—the thirst and the desire to conquer and master Nature. And man, filled with genius and power, and created in the likeness of the Divine Author, is the wizard who has produced these marvelous varieties from that rough and knotted wild crab."

Hundreds of Johnny Appleseeds have lived and died in the world and given King Apple a new beauty and quality, and gradually the world has been finding the worth of fruit; but the advance is too slow, hence the national Apple Day. For a day the apple will grip the country and the people will, it is hoped, remove the apple from the luxuries into the ranks of the necessities.

Shellville, Cal., Jan. 5, 1914.

Editor Green's Fruit Grower:—I find much pleasure in reading Green's Fruit Grower. Every issue, without exception, is worth the price of the year's subscription. Much valuable information is gained and many good suggestions obtained in its careful reading. Who ever heard of an apple or pear tree hedge until it was suggested by Mr. Charles A. Green through the columns of his magazine?—Wm. L. Sigismund.



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**C. A. S. FORGE WORKS, Saranac, Mich.**

### Nitrogen in Manure

The process of nitrification is a three fold one and requires the action of three kinds of bacteria, says Pennsylvania Farmer. The first step is simple decay in which the nitrogen is reduced to compounds of ammonia. This often takes place in manure piles, the ammonia which there escapes producing the characteristic smell of "burning" manure. It is caused by bacteria, called ammonifying bacteria. In the second step the ammonia compounds are changed to nitrites (salts of nitrous acid). This is accomplished by bacteria called nitrite bacteria. The third step is the changing of nitrites to nitrates and is caused by nitrate bacteria. In the case of the last two changes, the product of the bacteria is the free acid, nitrous acid being the first formed, and nitric acid being formed in the last change. As these acids are by-products of the bacteria they are poisonous to them, and must be removed or the bacteria cease their action. In soils well supplied with basic substances such as lime, the acid combines with it as fast as formed, and the resulting calcium nitrate is used directly by the plant. If, however, lime is deficient, the soil becomes acid, and, partly owing to the absence of nitrates, unproductive. Therefore we see that by supplying plenty of lime we are indirectly furnishing nitrogen to the crop.

Other forces, however, affect the activities of the nitrifying bacteria. Too much or too little water curtails their action. They need water, but they also need oxygen, and must not have so much of the former as to exclude the latter. A supply of humus in the soil for the bacteria to use as raw material is essential.

There are unfortunately in the soil, bacteria called denitrifying bacteria, which attack the nitrates which have been formed and break them down. These however thrive best in a wet soggy soil. Hence the conditions which would enhance the activities of the friendly bacteria are detrimental or fatal to the unfriendly.

To summarize then, in order to supply nitrogen to the plant, we must have plenty of lime present. The soil must be well drained and must have a supply of raw material, either as humus or as commercial fertilizer containing nitrogen.—Earl E. Barnes.

### When to Eat Apples

I have never regarded the apple as a dessert fruit. For me it is too hearty after meals, but at other times it is a most satisfactory fruit, says Editor of Post Express. As a noonday lunch for an office man, two ripe apples will serve very nicely. Many office clerks who need to practice economy are spending 40 to 50 cents each day for lunch. They will find that if they are fortunate enough to be fond of apples, their hunger will be satisfied and at dinner they will relish their evening meal more than if they had eaten a hearty lunch. Another time I like apples is in the afternoon about 4 o'clock, when they are always refreshing and the time is sufficiently in advance of dinner so that the keenness of one's appetite is not dulled.

In the evening about two hours after dinner or just before going to bed they always taste good.

The consumption of citrus fruits in this territory has had a wonderful increase due to clever advertising and co-operative merchandizing. The result is that we are neglecting the apple which really is a wonderful fruit.

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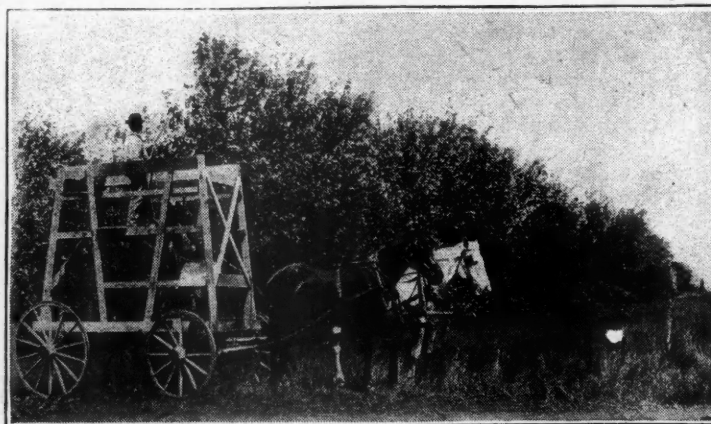
Written for Green's Fruit Grower by JOHN E. TAYLOR

**T**HERE is an orchardist in New Hampshire who has reclaimed an orchard, and his profits from it are now big. His methods show what can be done with an old orchard. In telling about it he said:

"My father was a man who, like three-quarters or more of our New England farmers, did not believe in pruning his trees. The only thing that he would ever allow the hired man to do, or would allow me to do when I was a young man at home, in regard to pruning trees, was to cut out the dead wood and some of the suckers or water sprouts. So you can see how those trees had been growing for years and in what condition they were. And in addition to that, half or two-thirds of them were badly infested with the scale. When I made up my mind to see what I could do with the trees the first winter, the winter of 1906-7, I started in pruning them what I could. With the condition the trees were in, I only got over a few trees during that winter, with what other work I had to attend to.

"There were then about 700 trees on the place. About the first of March, I ordered a barrel of Scalecide. I thought I would try to spray the worst of those trees for the San Jose scale. I took a barrel pump, and my man and myself went over

even spray. At the end of four days, we got over the orchard. The man said: 'Are you going over the other one?' I told him no, the work was pressing, and that old pump did work hard. I said if there was any good in spraying, we would find it out. Both orchards blossomed apparently alike, and by scattering trees the same. I watched the difference between the two orchards through the summer, and I could very soon see that there was a big difference. And when we came to harvest the apples in the fall, from the south orchard I harvested a little over 600 barrels of good, nice, smooth apples which would practically all go for No. 1. There might have been eight or ten per cent. that would not. I sold them as mixed apples, as we were in the habit of doing at that time, and got a good price for them. There were only from 30 to 35 bushels of cider apples that came out of that whole lot. In the north orchard I harvested a little over 100 barrels of not nearly as good apples, and I sold over 500 bushels of cider apples out of that orchard. This convinced me that spraying paid, and I made up my mind then to take hold of it in good earnest and do what I could with what trees I had. That fall I decided that if I was going to spray, I must get some sort of a power sprayer. I pur-



Spraying the orchard on the Fairmount Farm near Winterset, Iowa. This farm is in Madison County, Iowa's largest fruit and berry farm and is owned by W. H. Lewis. The orchard in which this was taken covers over four acres of ground.—Leon L. Sumner, Iowa.

a few of the worst trees and disposed of that barrel of Scalecide. Then my son stepped in again and said: 'Why don't you spray for the codling moth and see if you can raise some good fruit?' Well, I considered that awhile and finally I ordered two 100 lb. kegs of Bowker's Pyrox, and my hired man and myself went to work on one of my orchards to spray the trees.

"To explain the condition of things, I will have to explain the position of the orchard on that farm. There are two orchards: one at the south end of the farm, which we call the south orchard, contains something over 300 trees; 125 of these are trees that are 21 and 22 years old, which my father set out. He kept that ground cultivated for two or three years and then it went into grass and has remained so ever since. In the remainder of the orchard, the trees are at least 60 and I don't know but more than 70 years old. The north orchard contains a little more than 200 trees and they are all old trees, 60 or more years old. In a part of that orchard the trees are only about 25 feet apart, and they run up high. You can imagine what condition they were in. There are also about 200 other trees scattered over the rest of the farm in rows along by the walls and in single trees through the mowing.

#### SPRAYING FOR CODLING MOTH

"When I commenced spraying for the codling moth, my man and I went to work in the south orchard. It took us four days with that pump to go over the orchard. There were a great many high trees in the old part and we tried our best to hit the tops of them. We did fairly well, I think, for a barrel pump and with the nozzle we had, that threw streams instead of an

chased a power sprayer of the Friend Manufacturing Company, and I decided to use lime and sulphur to spray for the scale. I put in a cooking plant of my own and cooked my own lime and sulphur, putting in a steam boiler and a tank for cooking, and then running the lime-sulphur wash off into my spray tank, and during the month of December, up to about Christmas time, I got over my trees.

"It is quite a serious job to spray for San Jose scale and do it in good shape. One who has never done it or handled the lime and sulphur wash hardly realizes what it is. We are obliged to spray with the wind, and there is always plenty of wind any time during the months that the trees are dormant. Every bit of the wood has to be covered in order to smother the scale. It took me the whole month of December, what weather I could get that was suitable, to spray. In the following March, I went all over my trees again and gave them a good thorough soaking. And of course in May when the trees blossomed, I sprayed for the codling moth as before, and two weeks afterwards went over them with another lot of Pyrox. The result was that I harvested 1,150 barrels from my orchards, and they were all fairly good market apples,—not nearly as many cider apples as I had the year before.

#### FERTILIZATION

"Now in regard to fertilizing my trees. I have taken up two or three different ways in different orchards. My north orchard, in which I spoke of the trees as being close together, the first two years I fertilized with manure from the barn, put on with the manure spreader at the rate of about ten loads to the acre. I ploughed that in, running the plough shal-

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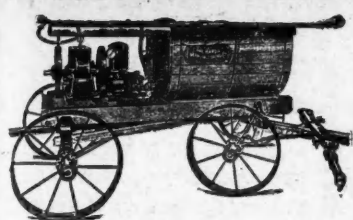
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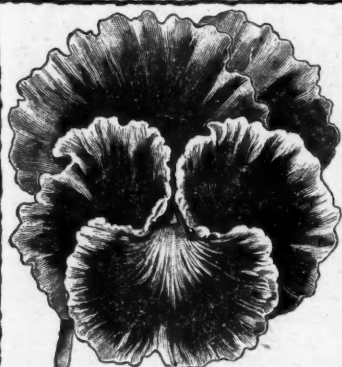
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low, not more than three or four inches deep, and kept that harrowed down the greater part of the season. I did that for two years, 1907 and 1908, with that orchard. The south orchard and my scattering trees, I put on for the first two years bone and potash, mixing them half and half, and putting on about twenty pounds to the tree, not putting it nearer the body of the tree perhaps than three or four feet, and extending out quite a distance beyond the limbs. In 1909 and 1910 I used ashes and bone. In 1909 I put on 13 tons of Canada hard wood ashes, four tons of bone, and about three-quarters of a ton of nitrate of soda, mixed together and put on with the manure spreader, broadcast over the ground. The north orchard I ploughed again as I had the two years before. The next year I did not plough it, but left it just as it was. There is a question in my mind in regard to the cultivation of old orchards like these. It has been agitated here that you get better fruit to cultivate the orchards. I think that is true with young orchards if you follow the cultivation along. But I have had a little experience that seems to indicate that it does not agree with old orchards.

### PRUNING

"In regard to pruning the trees. After the first year, in which I had good returns for spraying the south orchard, I hired a man who understands pruning pretty well, and we went to work and did all we could during that winter, up to the time we commenced the spring's work, on pruning. After the first spraying for San Jose scale with the power sprayer, I found my trees were too high. We would use a 30-foot ladder to pick some of the apples from many of those old trees, and then we couldn't reach within five or ten feet of the top. In pruning I cut the tops of those trees out, cutting ten, fifteen and even twenty feet off the top, and I have also cut the side limbs where you could not get near enough to throw the spray into the center of the tree from the tower of the machine. We would throw up from the ground as far as we could. Since then I have been able to get near my trees.

"I spoke of fertilizing and putting on 13 tons of ashes. This last spring I put on 18 tons and only 2 tons of bone and left out the nitrate of soda altogether; I think I did better by putting on more of the potash and leaving out the nitrate of soda, and perhaps the bone.

"What was the result of these four years' work? The first year I harvested 835 barrels of good market apples; 1908, 1,150 barrels; 1909, a little over 1,000; and the following year, something over 800. In the year 1907 the 835 barrels returned me a little over \$2,400 at my station; in 1908, I received a little over \$2,500 at my station; the following year the 1,000 barrels were all sold in Boston. Part of them were sold in the fall soon after they were packed and the remainder went into cold storage and were sold out in February and some as late as March. I realized something over \$3,000 for those."

Dead limbs from trees in the orchard should go into the brush heap or woodshed.

Don't let any fruit remain on the trees during the winter. Rotten apples are good places for insects to hibernate in during the winter.

In pruning bush fruits the principal object is to shape the bush and do away with all unnecessary growth. This can be overdone, however, and should not be carried to extremes.

All dead growth or portions of trees or bushes cut away in pruning should be piled up and burned. It is a very poor policy for any orchardist to sanction and maintain a brush pile. It invites and harbors countless insect pests during the winter and is of decided injury to the orchardist. It may also be a shelter for mice, rabbits and other enemies of tender young trees and growth. Always make it a practice to clean up and burn all rubbish each day after pruning. It is the better policy.

### TESTIMONIAL

Wapello, Iowa, March 10, 1914.

Mr. Charles A. Green:—I have been a reader of your magazine for years past and I do not wish to be cut off from its benefits. I have appreciated it more than any other, yes more than all other fruit magazines which come to my table.—L. A. Reiley.



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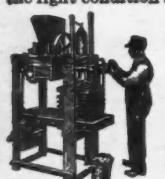
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## Health Department

### How to Keep Young and Well

Mr. H. L. Briggs, a subscriber of Green's Fruit Grower living in Oregon, asks how to keep young, how to be always well and happy.

Reply: One method of keeping young is to be continually active. Activity means life. Inactivity means death. Notice the activities of children and of the lamb, colt, calf, pig and chicken. Should you tie up one of these little creatures and prevent its activity you would engender disease and shorten life and would make the little one unhappy.

The easy thing for aged people to do is to rest if they are able to dispense with work. They sit in the arm chair before the fireplace looking out at the fall of rain or snow from the window and felicitating themselves on being so comfortable, but they would enjoy better health and live longer, be happier, if they would get out each day and accustom themselves to outdoor exercise in almost every kind of weather and at all seasons.

Every faculty is weakened when not used, and strengthened when frequently exercised. We realize this as indicated by the weakness of our legs when we have not walked much for a long season, and their strength when we have exercised them daily in tramping over the fields or in playing games. It is the same with the brain. The more it is used the stronger it becomes. This reminds me that we should keep our heads clear and bright if we would live long and be happy. We should cultivate a taste for reading, for music and for games, both outdoor and indoor games.

Age is not a question of years. There are young men who are seventy years old. I know of active men who are ninety years old, who can write with as steady a hand as in boyhood. No, old age is a question of debility, of inaction, of yielding to the tendency to repose and inertness.

Sickness is not natural. It is natural for us to be well. When we are sick something has gone wrong with the human machinery. We consult a doctor to learn what has gone wrong and how we can mend it. Nature is the great physician. Nature can do more for the invalid than all the doctors in the world. Nature makes the cures. The doctors try to help nature, but in many instances they are a hindrance, and yet when ailing I advise the services of the best physician obtainable. If you would live long and be happy do not overdo in eating, drinking, working, sleeping or in any of the activities of life.

An apple and a glass of water taken at bedtime regularly, will keep the bowels in good condition.

Boiled onions are the standard remedy for colds in hundreds of farm homes, and there is nothing better anywhere. Simply dressed with butter or cream and eaten at bedtime they will do more to work off a cold than quarts of medicine. Nothing else should be eaten unless it is a little bread and butter, for a large dish of onions will induce sleep, and Nature will look after the curing of the cold with no other help.

Mastication.—Eighty-five per cent. of the stomach troubles of mankind are caused by improper methods of consuming food and drink. The human mouth is neither a mere receptacle for food nor is it designed solely for tasting. It is as much a digestive organ as the stomach itself. More than half the process of digestion should take place in the mouth. It is when the work which should have been performed by the teeth is thrown upon the stomach that indigestion and other troubles ensue.

The Benefit of Laughter.—An eminent surgeon says: "Encourage your child to be merry and to laugh aloud; a good, hearty laugh expands the chest and makes the blood bound merrily along. Commend me to a good laugh, but to one that will sound right through the house; it

will not only do your child good, but will be a benefit to all who hear, and be an important means of driving the blues away from a dwelling. Merriment is very catching, and spreads in a remarkable manner, few being able to resist the contagion. A hearty laugh is delightful harmony; indeed, it is the best of music."

### How to Remove Soft Corns

To cure them, the cause must first be removed as far as possible. Bathe the feet in drying, cooling lotions, and liberally sprinkle between the toes any fine plain or carbolated powder. A good bath for soft corns is: A heaping tablespoonful of salt, a generous pinch of alum and a few drops of arnica added to a quart of water. A splendid powder, if you wish to make one yourself, is made from about four ounces of Fuller's earth and half an ounce of tannin and bismuth. If the feet are carefully bathed and dried, and then a piece of cotton is dipped into the powder and placed between the toes that are troubled, there will soon be a cure. Even after the cure has been effected, the toes should be powdered and kept apart by placing cotton between them. Make sure the toes and feet are kept dry.

### Temper Affects the Heart

"To keep your temper is rather a good idea," said Dr. Strickland Goodall in a lecture at the Institute of Hygiene. Every time the heart contracts, he said, its force would raise a weight of two pounds to the height of one foot, and it does this from 70 to 140 times every minute.

Acute heart strain was difficult to produce in a young, well nourished, and healthy adult, but it was very easy to produce if the heart muscle was anemic or poisoned, or was the seat of degenerative disease.

Running to catch a train increased the heart's work by 228 foot-pounds a minute. Ascending a staircase slowly increased the heart's work by 112-foot pounds; ascending quickly, by 152-foot pounds.

The enormous amount of total extra work done by the heart was shown in the experiment of riding a bicycle up hill, the gradient of which was 1 in 10, and the length 2,904 feet. The ride occupied three and one-half minutes, and the total extra work done by the heart was no less than one and one-eighth foot-tons.

A rest of half an hour daily would save in a year 219,000 foot-pounds of work on the heart.—London Chronicle.

"Yawning is about the best cure I know of for the hiccoughs," said an observant man, "and I have stumbled on the truth quite by accident. It was proved in my case a sure cure, and by reflection I am convinced that it is a perfectly logical result, a result explainable, too, on physical grounds. All kinds of remedies are resorted to by men who suffer periodically with hiccoughs, like stopping the ears and drinking a glass of water slowly and without a stop, or by holding the breath, or counting, or thinking intently on some subject, and in many other ways. I have tried all of these remedies, and at times have been fairly successful in checking the hiccoughs. Again, I have seen each one of these remedies fail."

### An Old Apple Orchard

Green's Fruit Grower: The writer has an old orchard which was in bad shape until about one year ago. Last summer showed increase in crops, but a few of the trees started out with a good crop and were unable to mature the apples, which dropped off before picking time. What do you advise for this trouble?

Last month we pruned all the trees, cutting a good deal out of the middle of each tree. What effect has early pruning on next year's crop?—R. E. Whiteman, Michigan.

Reply: You should not expect in one year to fully revive an old neglected orchard. Possibly you plowed too deeply, disturbing many of the roots. An old orchard that has not been plowed for many years should be plowed not deeper than four or five inches.

Early pruning, that is pruning done in June or July, consisting simply of cutting back the new growth, will tend to induce fruitfulness, but I would not consider pruning done in October or November early pruning, though it is early winter pruning.

## Planet Jr Seeder-Harrow

Planet Jr tools are the greatest time-, labor-, and money-savers ever invented for the farm and garden. They pay for themselves in a single season in bigger better crops, and last a lifetime. Fully guaranteed.



A splendid combination for the family garden, onion grower, or large gardener. Is a perfect seeder, and combined double and single wheel-hoe. Unbreakable steel frame. Capacity—2 acres a day.



Stronger, steadier in action, and cultivates more thoroughly than any other harrow made. Non-clogging steel wheel. Invaluable to the market-gardener, trucker, tobacco or small-fruit grower.

72-page Catalog (168 illustrations) free. Describes 55 tools including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard and Best-Cultivators. Write postal for it.

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### ADVERTISEMENT

## MORE POTASH COMING

American crops and soils are still as hungry for Potash as before the outbreak of the European War, which curtailed the Potash shipments.

Some of the Fertilizer Companies are trying to induce farmers to buy the one-sided low Potash or no Potash fertilizers of a generation ago. This means a fertilizer that is profitable to the manufacturer, but not the best for the farmer. When the Syndicate in 1910 started the direct sales of Potash to dealers and farmers at reasonable prices, Potash sales increased 65 per cent. in one year, a clear proof that farmers know that Potash Pays. They know that Potash gives good yields, good quality and resistance to plant diseases.

Many of the Fertilizer Manufacturers are willing to meet the farmer's wishes and sell him what he thinks he needs. These manufacturers are now willing to furnish as much Potash as they can secure. They offer goods with 5 per cent. and even in some cases 10 per cent. Potash, if the farmers insist on it.

Shipping conditions are improving, more Potash is coming forward although the costs of production and transportation are higher. The higher price of fertilizers is not due wholly to the slightly higher cost of Potash. Much of the Potash that will be used in next spring's fertilizer had reached America before the war started.

There is no substitute for Potash.

We can no more return to the fertilizer of twenty years ago than we can return to the inefficient farm implements or unprofitable livestock of that period.

H. A. HUSTON.




**100% Potato Planting**  
More important than ever, the U.S. will export potatoes this year. Every bushel raised will be needed. Potatoes are scarce. Seed will be high. This planter puts one piece only in every space, saves at least one bushel of seed every acre no injury to seed, no disease carried, best distribution of fertilizer. Ask your dealer to show you planter and write us for free illustrated booklet.

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**IRON AGE**

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## Make Money IN CALIFORNIA THIS YEAR

There are many chances for money making to-day in the great San Joaquin Valley. There in the heart of golden California, fruit growing, dairying and poultry raising offer returns that appeal to the man who wants to make his effort count for most. One woman's 75 acre ranch returns her net \$10,000 a year. Soil, climate and irrigation make the San Joaquin Valley a great food factory.

It has hungry markets to feed. Two of the big cities of the Pacific coast hold international exhibitions this year. Local mines and lumber camps never get enough farm products. And all the rest of the world is glad to get and pay good prices for California products.

You will find a well developed country. There are good schools, good roads, telephones, rural delivery, electric light, power and trolleys. You will find a neighborliness and get-together spirit that makes a success of co-operative effort in getting the profit for the grower.

The Santa Fe is not selling land. We want to settle contented, successful farmers along our lines. We know where the opportunities are. We gladly point them out, and put you in touch with men on the ground who will show them to you. We can save you time and money, because you need not duplicate the investigation we have made.

Our books, "San Joaquin Valley," "Dairying" and "Poultry Raising," give much information. Then if you will write what more you would like to know, we will be glad to tell you. The books are free; so is all the additional assistance of Santa Fe agricultural demonstrators, who will help new settlers in selecting the right crops to get the best results. Just give your name and address, and say: "Send California books."

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**My New Low Down No. 8 Spreader**  
with cut under front wheels and trussed channel steel frame is positively the best spreader in the world. Light draft, endless apron, positive force feed, double chain drive. Just ask for my book, "A Spreader of Gold," FREE, and I will tell you the truth about manure spreaders and how to get the greatest profit out of your manure products.

**New Sanitary Cream Separator**  
I will send it anywhere in the United States without an expert to set it up to any inexperienced cream separator user for a 30-day free trial, to test thoroughly against any make of separator that even sells for twice as much, and will let you be the judge. Built up to a high standard and set down to a low price. Travel 25,000 miles, look over every factory in the world, and you can't find its superior at any price. It's the most sanitary, most scientific, cleanest skimmer, the most beautiful in design of any cream separator made today and I have seen them all. A postal gets our big free Separator catalog and 1915 sliding scale, profit-sharing price schedule. **GALLOWAY MASTERPIECE BIG 6** Positively supreme in power, simplicity and design. All our years of engine building are built into it. A mechanical masterpiece. Long life and satisfaction to engine users are built into every one of these Galloway Masterpiece Big Six Engines. Great volume, perfect design and simplicity are what make this price possible. A heavy weight, heavy duty, large bore and long stroke engine not overrated. Get right on engines before you buy. Get my free engine book before you buy an engine at any price.

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**Wm. Galloway, President, The Wm. Galloway Co., 547 Galloway Station, Waterloo, Iowa.**

### Green's Fruit Grower.

Enclosed a dollar, just one, to be sure—Who would not pay it for a paper so pure, so full of advice about trees and men? I fully believe it is worth a ten! It tells of a man way up in New York Who raised fifteen barrels without much work, Of Gravenstein apples, I mean, per tree. Great Scott, what a pile! I should like to see! It tells of a city man, coming to earth, To look for a joyful and easy berth— Fooled with Mother Earth a year or so, Went back to his shop—it was no go. It tells of diseases, bugs, worms and scale, Tells how to grow apples and never fail.

—C. Jessen, Ill.

### National Apple Day Observed in Springfield, Mass.

Editor of Green's Fruit Grower—The Hampden County Improvement League got behind the National Apple Day movement heartily and pushed it hard from the start. The local commission merchants heartily co-operated with the league. The local newspapers helped by giving freely of their space. The results were far beyond all expectations—showing what can be done with agricultural advertising.

The Apple Day with its educational work has increased fully 50 per cent. the demand for apples in Springfield and vicinity, so that the local crop is going to be well cared for at home. Prices of apples have undoubtedly advanced fully 25 cents per barrel, which means that the producers are benefiting as they should by this Apple Day advertising.

A lot of interest was created because of the beautiful window displays of apples by different stores, this interest being largely stimulated by the offer of H. J. Perkins of ten barrels of extra fine apples, to be given in four prizes to the four stores that made the best window displays. The apples in the windows have caused much admiration on the part of the public who are surprised that New England can grow as good apples as can the west. The stores report 50 to 75 per cent. increase in apple demand—much of the increase coming from people who never purchased apples formerly. They report that the demand for apples is just as good now as it was during Apple Day. This shows that the beneficial effects of Apple Day are to be continued throughout a long period and that they will not be only temporary as some people have felt they would. The stores in their daily advertising have boomed apples and pushed them hard. Our store windows had had catchy advertisements such as: "Eat apples and life forever," "New England apples best in the world," "Try them and see for yourself." The restaurants of the city co-operated by having window displays of beautiful apples, by giving away extra fine apples to their customers, and by featuring apples on the menus. They report that since Apple Day, people are asking for more apple dishes than ever before. The hotels in the city advertised Apple Day and had apple menus. Many of them kept open house the evening of Apple Day in honor of the Apple, the King of Fruits. Even drug stores, candy stores and dry goods stores got into the spirit of the day and showed displays of apples and advertised apple taffy and other similar apple products. The trolley company very gladly allowed signs to be placed upon the front of their cars which read: "National Apple Day, October 20th. Eat apples by the peck—buy them by the barrel." Similar posters were used by the stores throughout the city, which helped to advertise the day and the value of apples. H. J. Perkins' commission house had their auto trucks placarded with similar posters, and employed a man and a trained rooster to walk the streets the day preceding and during apple day with a basket of apples having a placard reading: "Eat an apple a day and keep the Doctor away." This caused a great deal of admiration and interest on the part of the public. W. C. Hansen of Granville, a progressive apple grower, got into the spirit of the day and drove into the city with an auto load of apples which he gave away to passersby. Secretary.

By sorrow men learn that they need to be fed with higher food; that they must rest on stronger supports; that they must have other friends and other friendships; that they must live another life; that there must be something that neither time, nor chance, nor accident can undermine and sweep away. When men have learned the interior lesson of sorrow, they look upon trouble not as being a troublesome thing, but as, from a higher point to which they have risen, unreal and dreamy.—Henry Ward Beecher.

## Breaks all Records for Strength and Convenience

You want a farm gate that is easy to handle, that will lock itself securely, that is strong enough to resist severe shock, that you can depend upon at all times, day or night, and that will last you a life time.

The Republic Royal Blue Farm Gate is galvanized by our special process of galvanizing which is guaranteed to remain rust-proof longer than any electric galvanizing process now in use.

It combines superior strength with every convenience. High carbon steel frame, end bars "U" shaped, doing away with malleables used on tubular steel, raise gates, greatly reducing chances of breakage. Trussed center bar of channel steel resists shock; closely spaced, firmly woven No. 9 wire fabric heavily galvanized; automatic stock proof latch; double raising device.

Made and guaranteed by the largest farm gate and wire fence factory in the world.

**REPUBLIC ROYAL BLUE GATE**

It is the gate you want and will buy if you see it. Write for Illustrated Folder. See your Dealer.

**REPUBLIC FENCE & GATE CO., 31 Republic St., North Chicago, Ill.**

When you write advertisers Please mention Green's Fruit Grower.

**Torn!**

Even though our prices were half what dealers ask (and below what other mail order houses ask), our 1914-1915 catalog is now a dead one. We took advantage of the W.A.R. Our secretary went to see the manufacturers personally. He found them so thirsty for business, they gave prices never before thought of. And all on good, new material, too. So, sip!—our 1914-1915 catalog has been

**Roofing Cut to Bone**

On the left is one of the pages from the roofing part of our catalog. These old prices are dead ones. Our new Roofing Book shows steel roofs at unheard of

**Fencing at Record Prices**

In the 1914-1915 catalog there were 30 styles of fences at prices equal to any. In our new Fence Book there are over twice that many styles, at prices which are

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We used to be proud of our former wall-board page (shown at left). But now, with a better board (moisture-proof) and with new prices, we wonder people could have been so enthusiastic

features. Our three new separate catalogs show prices that make old ones look sick. We landed these prices because (1) the factories had to have the business, and because (2) we contracted for great big quantities. We may lose a lot of money as a result. But, the recent crops have given the farmer enough money to buy and, surely, all intelligent farmers will at least ask for some of these new catalogs.

prices—Also, Queen City rubber roofing that is guaranteed 12 and 15 years—Along with rubber roofing at (per roll)..... **59c.**

lowest yet. For instance, regular "stiff-stay" style, heavily galvanized, at prices as low as (per rod)..... **11c.** No. 9 guaranteed 5 yrs.

about our former value. Now, the very best board can be had at the rate of (per hundred square feet) **\$2.25**

<b>PLUMBING</b>	<b>PAINT</b>	<b>BUILDING MATERIAL</b>
Let us send you our new plumbing proposition. Enameled bath tubs as low as \$5.25.	Ask us for free Color Card showing our \$-saving line of all kinds of paint.	Absolutely everything for building. Send us your lumber bills—we can save you half.

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At lower prices than you can get elsewhere. Our catalog of 196 pages FREE. **MAIL THIS COUPON TO-DAY**

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**TO MANUFACTURERS' OUTLET CO., Dept. 770 BUFFALO, N. Y.**

Mail me, free of any charges, the following catalogs which I have checked:

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**THE MAIL-ORDER HOUSE OF THE EAST**

**Manufacturers' Outlet Co.**

Sycamore St. and Erie R.R., Buffalo, N.Y.

When you write advertisers Please mention Green's Fruit Grower.



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\$2.50 Worth to Test only 10 cts.  
We will mail the following 95 Packets choicest Fresh, Reliable Vegetable and Flower Seeds for 10c. Money returned if not satisfactory.

BEET, Crosby's Egyptian, best, sweetest early sort.  
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LETTUCE, May King, tender, popular head.  
MUSKMELON, Rocky Ford, best garden melon.  
WATERMELON, Deposit Early, earliest, sweetest.  
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DEPOSIT SEED CO., Deposit, N. Y.  
20 packets Grand Large Flowering Sweet Peas, 10 cts.

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Order This State Fair Collection. You will win next fall by growing these sorts. 5 large packets of choicest seeds mailed for 10c.

Gregory's Improved Crosby Beet; Lucullus Swiss Chard for Greens; Sugar Leaf Lettuce, a dandy; Extra Early Scarlet Globe Radish; Gregory's Victor Squash.

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Describes the very best reliable sorts of vegetable, field and flower seeds. Illustrated with "true-to-nature" pictures. Gives honest prices for honest seeds. Write today.

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Hardy Northern Grown, Vigorous Croppers, DIRECT from the GROWER to the SOWER. Save the Middleman's Profit.

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To get acquainted we offer you OUR BIG GEM COLLECTION of Flower and Vegetable Seeds, comprising one big package each of Giant Aster, Mignonette, Dianthus Pinks, Zinnia, Candytuft, Cosmos, California Poppy, Early Red Onion, Early Summer Cabbage, Roy Gem Radish, Early Curled Lettuce, Purple Top Turnip, Perfection Tomato, Golden Heart Celery, and Long Standing Spinach.

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At special bargain prices. Write for samples, price list, and illustrated circulars telling how to grow and use the crop.

**SWEET CLOVER WHITE OR YELLOW**  
Of excellent purity and quality. Samples, circular of information and Red Ink Harvest Price List FREE.

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We are trying with all our might to furnish absolutely pure, Red, White, Mammoth, Alka, Timothy, Sweet Clover, and all other field seeds, with all blighted and immature grains removed. Write today for free samples and instructions. **How to Know Good Seed.**

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**SEEDS Big Bargain 10c**  
20 Packets

Generous packets of tested seeds from regular stock. Over 600,000 of these mammoth collections sold. We make this surprising offer to get you to try our quality seeds and see our low prices.

Best, Perfection Red Turnip	Redish, White Icicle
Cabbage, Winter Header	Tomato, Earliest in World
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Lettsue, Bell's Prize Head	Green Thick Leaf Spinach
Black Nelson, Luscious Gem	Cress or Peppercress
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Onion, Prizefighter	Elite Dwarf Nasturtium
Parsnip, White Sugar	Triple Curled Parsley

**Money Saving Catalog** and coupon for 10c—good on 25c order—free. Number of collections limited—send for yours today.

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**Comparative Dusting and Spraying Experiments**

By DONALD REDDICK and C. R. CROSBY, of Ithaca, N. Y.

Delivered before the Western New York Horticultural Society, at Rochester, N. Y., January 27, 1915

Many New York apple orchardists suffer much loss from diseases and insects because they are unable to cover their trees with protective materials at the critical periods. In some cases this is due to a lack of equipment, but in other instances it is impossible to secure labor or horses during the few weeks when such substances can be applied effectively. In addition there are a number of growers who treat their orchards at the proper time but often to the neglect of other crops. These were the points in mind when, some years ago, renewed attempts were made to apply the poisons in the dry form, the idea being that a powder could be blown over the trees much more rapidly than if applied as a spray. The basis for selecting suitable powdered materials and the comparative results secured to date from the use of dust and spray were presented by the senior author before this society a year ago. According to promise the work reported at that time has been continued and in some respects the results secured are more satisfactory than those of previous years.

**DISEASES OF THE SEASON**

As is usually the case the only disease amenable to the treatments given was the scab disease. This trouble was pro-

Blush and Rhode Island Greening at about the time they were ready to harvest.

**INSECTS OF THE SEASON**

Codling moth, which is commonly one of the worst of the insect pests, was a negligible factor in the three orchards in which experiments were performed.

Bud moth was present in the orchards and injured foliage and buds, but the set of fruit was so large in all cases that the injury was not apparent. The bud moth injury was from a brood appearing in August.

Leaf roller and green fruit worm were troublesome in one orchard. If weather conditions could have been anticipated, and the first application of the preparations applied several days earlier, the control of these two pests, and of apple scab as well, doubtless would have been better.

**EXPERIMENTS OF 1914**

In the experiments to be reported here it was the intention to determine if possible whether the results of 1913 could be duplicated or improved, whether the method was applicable in large old trees, whether the expense of dusting could be lowered by reducing the quantity of lead arsenate and of sulfur applied per tree, and whether the adhesiveness of the



Thorough spraying counts.

nounced in 1913 in a number of localities but it was very general throughout the state in 1914, and in many instances a very high percentage of the fruit was damaged. The combination of conditions responsible for the trouble is one that does not occur every year, and the failure to control scab is due more to a lack of understanding of the conditions which permit scab infections rather than to a failure to make thorough applications or to the use of the wrong material. In the first place the foliage of 1913 became thoroughly infested with the scab fungus during the latter part of the season. The fallen leaves therefore bore a large crop of the shooting stage of the scab fungus. Excellent infection weather came on May 11, 12 and 13. The fungus was farther advanced than usual as compared with the development of foliage, and the result was that a heavy primary infection came a few days before the "pink" application could be made satisfactorily. There was ample time for making the calyx application, May 25 to June 1, but the big secondary infection did not occur until June 19 to 24. As many growers did not make the application "three weeks after the blossom" a considerable amount of fruit was infected at this time although this was not particularly noticeable until the middle of July. The abundant early summer infection made it certain that much late infection would occur during the rainy and foggy period extending over the latter half of August. The scab spots resulting from these late infections became very noticeable on such varieties as Maiden

mixture could be improved by the addition of inert ingredients. The probabilities of securing a good test were excellent. The scab fungus was abundant on the fallen leaves and only required suitable weather conditions for a heavy infection. Insects, except for codling moth, were to be expected in their usual abundance.

**Orchards Selected.** Three orchards were selected for the work, one a large Baldwin orchard fifty years of age located in Orleans county; the other two, Ben Davis orchards twenty-one years of age, one located in Wayne County, the other in Tioga County. The latter orchard is entirely out of the orchard belt but offered a particularly favorable place for work because the only trees in the twenty acres receiving treatment were those of the experiment.

**Co-operators.** As usual it would not have been possible to have carried through these experiments successfully without the co-operation of many persons. We are particularly indebted to the owners of orchards, Mr. Fred H. Glidden and son, Holley; Mr. E. W. Catchpole and sons, North Rose; and Mr. O. W. Friedah, Owego, for placing such large blocks of trees at our disposal for experimental work and especially for allowing the use of such large blocks of trees for checks on the experiments.

The exceedingly fine sulfur flour was furnished by the Union Sulphur Company, of New York; the lead arsenate by the Corona Chemical Company, of Milwaukee; and the three dusting machines by the Kansas City Dust Sprayer Manu-

**440 Bushels Per Acre**

A new, main-crop, heavy-yielding white potato of Green Mountain type.

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That's what Mr. McKinney made last year from his grapefruit grove, in the vicinity of which our land lies. The Buffum grove, adjoining his, has annually yielded nearly as well for ten consecutive years. Mr. McKinney says our land is equal to if not superior to that on which his grove is planted. Vice Pres. Christianity, Pilgrim Fruit Co., of Boston, says, "you have the cream of Florida's citrus land." This is the great proven grapefruit and orange district—almost a million boxes shipped last year; largest grove (900 acres); best packing houses; highest priced fruit.

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We'll sell you land near Mr. McKinney's at right prices on easy terms—in a prosperous developed community; with established markets; low prices; free-grocery-and-dry-goods-delivery to your farm; telephone service at small cost; near railroads, towns, schools, churches. You can secure free grapefruit and orange trees to plant it. Other seeds at cost; be on a hard road—inexpensively because of stock law—be in a high, rolling, perfectly drained section, over 100 feet above sea; with clay subsoil; free from swamps, lowlands and malaria—a section lying on either side of 2 railroads, intersected by hard roads; having 12 stations, 6 towns.

Inexpensively you can build a pretty bungalow on beautiful fresh water lake, ideal for boating, bathing, game fishing. Elevation and lakes ideal protection against extreme heat or cold. Write TODAY for book of actual photographs, conservative literature and proof that YOUR FIRST CROP SHOULD PAY FOR YOUR LAND.

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No. 26 Magnolia St. Fruitland Park, Florida  
Owners, not agents. R. R. Fare Refunded to buyers



facturing Company, Kansas City, Mo.

**Methods and Time of Applications.** The spray was applied in each orchard with a power outfit, and all applications were made very thoroughly. With two exceptions, which did not interfere with the results in any way, each set of applications was made on the same day, so that any results secured should be entirely comparable.

The dust was applied with an "Ideal" outfit driven by 2½ horse-power horizontal New Way engines in two orchards and by a 1½ horse-power vertical one in the third. The 2½ horse-power engines gave ample power, and no trouble whatever marred the experiments. The 1½ horse-power engine did not give so good results.

It was expected that the orchards would receive the treatments at the most opportune times. Careful study was made of daily weather maps for possible infection periods, and development of fruit and foliage was watched closely. The first application was made slightly late to kill bud moth and leaf roller, but in two of the orchards a little too early to give maximum pedicel protection against scab. It became evident a little later, too, that the first scab infection period of the season came unusually early and that the early leaves of the blossom buds were infected before the first application was made.

The blossoming period came three weeks later than in 1913, the result being that the senior author, who is most interested in scab control, was detained in Ithaca with oral examinations the week that the second application should have been made. The blossoms were beginning to fall on May 25 and by the middle of the week it was evident that conditions favorable to infection would probably occur before the week was out. That rain did not fall on the orchard at Holley on May 29 or 30 is purely accidental since there was rain at Rochester, only twenty-five miles east, and in the other two orchards.

The third application was being timed principally for codling moth, although possible scab infection periods were being followed carefully. The work was begun on June 18 at Holley with indications that there would be ample time to finish the work before the next storm period. On June 19, however, the storm area was split and an area of apparently insignificant extent had swept across from the Dakotas and at 8:00 A. M. was central over Lake Erie. Following shortly after the applications at North Rose on the 19th a torrent of rain fell and apparently washed most of the material off the trees before it had had time to set. Heavy rain occurred at Owego also, followed by a foggy night thus permitting the biggest infection of the season. It may be regarded as purely accidental that the Holley orchard was treated on June 18th since there seemed to be ample time to finish the work before the next storm period. The other part of the storm area following in due course reached Rochester on June 21 and continued in most parts of the State until June 24.

The Glidden orchard was examined carefully the first week in August and it was decided that a late application was unnecessary as there were no indications of codling moth and very little scab. As was to be expected the Catchpole orchard showed a large amount of scab, as did also the Owego orchard. A late application (August 10th) was made in the Catchpole orchard. It came opportunely to forestall the heavy late infection of scab which came with a rainy period of two weeks duration beginning about August 15.

**Materials Used.** The sprayed plats were treated with commercial lime-sulfur solution, diluted 2½ to 100 on the basis of 32 Beaumé test, to which was added powdered arsenate of lead, 3 to 100, in the Glidden and Catchpole orchards and 2 to 100 in the Friedah orchard.

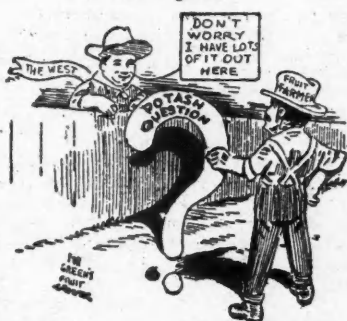
In the Glidden orchard an average of 8.52 gallons of liquid were applied per tree each time; in the Catchpole orchard 5.36 gallons and in the Friedah orchard 3.1 gallons. These amounts are somewhat in excess of the quantities used in commercial work, but were not too large since none of the material was wasted by dripping or otherwise.

The dust materials tested were four in number: 1. A mixture consisting of 80 per cent. of exceedingly fine sulfur flour and 20 per cent. powdered arsenate of lead; 2. A mixture containing 40 per cent. of the fine sulfur, 10 per cent lead

arsenate and 50 per cent. powdered gypsum (all the orchards); 3. A similar mixture but containing 50 per cent. hydrated lime (Glidden and Catchpole orchards); 4. A similar mixture but containing 50 per cent. wheat flour (Friedah orchard only).

It was planned to make applications of the dust mixtures equal in amount on all the plats, but the difference in flow of the various mixtures, the difference in size and shape of the trees and missing trees made this impossible. In the Glidden orchard, for example, trees in the plat dusted with 80 per cent. sulfur mixture received each time on an average 44.8 ounces of sulfur and 11.2 ounces of lead arsenate; those dusted with the mixture containing gypsum as a diluent received 21.3 ounces of sulfur and 5.33 ounces of lead arsenate; and those dusted with the mixture containing lime as a diluent received 20.16 ounces of sulfur and 5.04 ounces of lead arsenate. These figures may be compared with those of the sprayed plats where each tree received at each application on an average 8.62 ounces of sulfur and 4.09 ounces of lead arsenate.

(Continued in March Issue)



Since the supply of potash from Europe has been cut off by the war, the American farmer has been inclined to worry over the situation. Our artist in the above illustration is explaining that they have plenty of potash out west, which indicates how readily the American people meet contingencies. It is possible that the time will come when the United States will learn that she can get along without much help from European nations.

#### Vaccinating Fruit Trees

Mr. Jones, of near Fox Lake bridge, has been down to Hicksville, Ohio, investigating the result of vaccinating fruit trees, and is more than pleased with what he saw. He has received the agency for Steuben county and is selling the Treevax like hot cakes. Many people will be skeptical over the matter and say it is too good to be true, but Mr. Jones says time will drive away all doubts. It is claimed for the powder (which is administered by boring a hole in the tree a few inches from the ground, insert the powder and then plug up the hole with a wooden pin) that it will kill San Jose scale and other pests that live on the leaf, bark or roots of the trees.

Reply: The above is sent us by a subscriber of Green's Fruit Grower who asks our advice. Our reply is that this vaccination plan seems to us to be simply a fake or fraud intended to mislead the people. Spend no money in buying powders or liquids to inject into holes bored into fruit trees to clear the trees of scale or other insects or disease. Ignorant or tricky men have for years been imposing upon fruit growers by such quack methods as the above.

#### Rural Improvement

A commercial club down in Kentucky has appropriated a sum of money to be given as prizes among the residents of a certain section of the country for the best kept lawns and the best displays of farm and garden products. The idea of the club is to induce the people living in that section to improve their surroundings and beautify their premises. It believes in the value of keeping up appearances and that there is a profit in beautification which rural communities are not apt to appreciate. This organization thinks there are many rural homes that could be greatly improved in appearance by neatly kept lawns, attractive shrubs and well-cultivated gardens, and has come to the conclusion that timely attention given to details of this character by the farmer would not only vastly improve the appearance of his place, but stimulate his interest in the success of all his crops.

## The Jeffrey LIME PULVER

Announcing Sizes for Engines from 6 H. P. to 30 H. P.

In nearly all sections Jeffrey Lime-Pulvers are now being used to get ground limestone at lower cost. It's enabling the farmers with lime-rock to dig out the stone and make it enrich their farms.

Many farmers have long wanted a smaller machine—an outfit that would require less power—cost less. So we now announce the Lime-Pulver in sizes to suit different engines from 6 H. P. to 30 H. P.

The smaller outfits are both crushers and pulverizers that handle big 40 lb. rocks. The only difference is that their capacity is less than the

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Write us today. Tell us the horse-power of your engine, and get full information about the Lime-Pulver.

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We grow Corn, Cabbage, Oats, Potatoes and vegetable seeds of all kinds on our own farm. All seeds are carefully selected from choice varieties, then tested, and the percentage that will grow marked on the label. That's why Harris Seeds assure money making crops.

Our big free catalog explains our "hill-unit" system of selecting pedigree Seed Potatoes; also tells about Gold Nugget (Flint) Corn that produced over 200 bushels ears to acre. Send for sample of this corn. Also "Bumper Crop" Oats. Get our catalog and buy the finest seeds at wholesale prices. If you grow vegetables for market, ask for wholesale price list. Write now.

Joseph Harris Co. HARRIS SEEDS

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## Seasonable Supplies

### Special Prices on Reliable Spray Solutions Ready to Use

**BORDEAUX MIXTURE**—Price of one gallon in condensed form making 50 gallons of spray by adding 49 gallons of water, \$1.00; 5 gallons, \$3.50.

**ARSENATE OF LEAD**—Use one to three pounds of Arsenate of Lead to 50 gallons of water or Bordeaux Mixture. Price, 1 lb., 25c; 5 lbs., \$1.00; 10 lbs., \$1.50; 25 lbs., \$3.00; 50 lbs., \$5.00.

**BORDEAUX LEAD ARSENATE MIXTURE**—This is a fungicide and insecticide combined. Use one gallon of Bordeaux Lead Arsenate to 49 gallons of water. Price per gallon can, \$1.25; 5 gallons, \$5.50.

**LIME-SULPHUR**—Much used for San Jose scale and other scale insects. Price, one gallon, making from 11 to 45 gallons of spray, dilute as per directions on package, 80c; five gallons, \$3.25. Price per barrel, (50 gallons), \$8.50.

### Green's Cog Gear Barrel Spray Pump No. 18 for Small Orchard. Best Pump on Earth for the Money

It has bronze ball valves and brass seats; the plunger is brass, fitted with hemp packing. Will handle hot, cold or any caustic mixture. The cylinder and discharge pipe are all brass. The air chamber is 32 inches in length, enabling the pump to throw a uniform, constant and elastic spray. It has good leverage, is very powerful and easily operated. The Mechanical Agitator stirs the solution from the bottom, making it impossible for this pump to clog under any circumstances.

The new base is made so that the pump can be used on any barrel, regardless of height. Price, as illustrated, including Mechanical Agitator, 15-ft. hose and nozzle, ready for use, \$8.80.

8-ft. extension pipe 50 cents extra.

### Bucket or Barrel Spray Pump. Two Pumps in One

It has all the advantages of the ordinary barrel pump and bucket pump combined. Has one-half more air chamber than any other make of bucket pump. Is made of brass with ball valves; handle and foot rest are malleable iron. When used as a barrel pump, detach the foot rest and attach pump to top of barrel. Price, No. 24 complete, ready to use, with agitator, 5 feet of 3 ply hose and graduating vernorel, fine or coarse spray, and solid stream nozzle, \$4.45. With 4-ft. extension pipe for higher trees, \$4.75.

### Green's Grafting Tool and Grafting Wax

Green's Grafting Wax in convenient pound and ½ pound packages. Price postpaid ½ lb. 30c; pound 45c; 5 lbs. \$2.00. Green's Grafting Tool, complete, made of forged steel. Price, postpaid, 75c.

Send for Catalog of Fruit Growers' Supplies. Send Postal Today.

Address GREEN'S NURSERY CO., Service Dept., ROCHESTER, N. Y.



## Patterns for Women Who Sew



1211—Dress for Misses and Ladies. Cut in four sizes: 14, 16, 17 and 18 years, for Misses, and in four sizes for ladies: 36, 38, 40 and 42 inches bust measure. It requires for a 16-year size  $3\frac{3}{4}$  yards of 44 inch material for the overdress, and  $5\frac{1}{4}$  yards of 27 inch material for the undershirt. For a 36 inch size it requires  $3\frac{3}{4}$  yards of 44 inch material for the overdress and  $6\frac{1}{4}$  yards of 27 inch material for the undershirt. Price 10 cents.

1180-1178—Ladies' Costume. Waist, 1180, cut in six sizes: 32, 34, 36, 38, 40 and 42 inches bust measure. Skirt, 1178, cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires  $4\frac{1}{2}$  yards of 44 inch material for a medium size for the entire dress. The skirt measures about 5 yards at the lower edge. This calls for TWO separate patterns. 10 cents FOR EACH.



1186-1185—Ladies' Costume. Waist, 1186, cut in six sizes: 32, 34, 36, 38, 40 and 42 inches bust measure. Skirt, 1185, cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 6 yards of 44 inch material for a medium size for the entire dress. The skirt measures about  $2\frac{1}{2}$  yards at the lower edge, with plaits drawn out. TWO separate patterns. 10 cents FOR EACH.

1174—Ladies' Apron. Cut in three sizes: small, medium and large. It requires  $3\frac{1}{2}$  yards of 36 inch material for a medium size. Price 10 cents.



1202—Ladies' Costume with or without Vest. Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires  $6\frac{1}{4}$  yards of 44 inch material for a 36 inch size. The skirt measures about  $2\frac{1}{2}$  yards at the lower edge, with plaits drawn out. Price 10 cents.

1179—Ladies' Night Dress. Cut in three sizes: small, medium and large. It requires  $5\frac{1}{2}$  yards of 36 inch material for a medium size. Price 10 cents.



1200—Girl's Dress with or without Chemisette. Cut in four sizes: 4, 6, 8 and 10 years. It requires 3 yards of 44 inch material for a 6 year size. Price 10 cents.

# Woman's Dept.

1188—Girl's Dress. Cut in four sizes: 8, 10, 12 and 14 years. It requires 4 yards of 44 inch material for a 12 year size. Price 10 cents.

Order patterns by number and give size in inches. Address Green's Fruit Grower Company, Rochester, N. Y.

## Bear Ye One Another's Burdens

"My burden is too heavy, Lord,"  
I trembling said,  
"I can no farther carry it!"  
And tears I shed.

Then came a sudden cry for help  
From one sore pressed.  
I ran to seek him, gladly gave  
Him of my best.

Then thought I of my heavy burden—  
But, lo, 'twas gone!  
The gloom and doubt had vanished quite  
And Love's light shone.

When we another's burden lift  
Or try to bear,  
Love's gentle hand removeth swift  
Our load of care.

—Selected.

## Household Notes

Ham soaked in milk over night will be found exceedingly tender and sweet when used for breakfast next morning.

To wash colored silks, use cold water and but little soap. If the color runs, stir vinegar in the water until it sets.

A lump of charcoal kept in the drawer with the silver will absorb any chance moisture and keep the silver bright.

It is said that fish is delicious if when frying it is dipped into milk instead of egg before rolling it in the crumbs.

Chopped pecan nuts, almonds and pine nuts may be sprinkled over salad and covered with French dressing; it is delicious.

Candle grease can readily be removed from any fabric by laying blotting paper over the spot and applying a hot iron.

To remove cakes readily from the pans place them on a wet towel or cloth immediately after taking them from the oven.

To cook smelts so that they will be attractive, fasten the head and tail together with a toothpick after the fish is dipped in egg and crumbs.

Mothers can save much trouble if they will run darning cotton through the heels and toes of stockings when they come from the store.

To extract onion juice, cut the top off the onion, and press the heart with the spoon. Another way is to press the onion against a grater.

It is said that if in sprinkling clothes a whisk broom is used the clothes will be dampened much more evenly than by sprinkling by hand.

If, after washing a chamois, there seem to be harsh places, rub them steadily but gently through the hands and soon they will quite disappear.

## Who Is Boss of the House?

There are so many women who object to being "bossed," as they call it. My dear sisters, you can always be the boss if you will only take the trouble. By giving in you get your own way as you never would by fighting for it. And, after all, it is better to feel you respect your husband so much that to give into him is not a difficulty. Nine men out of ten are manageable if you go the right way about it, and one great point is to act after

marriage just as you did before. Arguments and contradictions are vital enemies to married peace.

Should you wish for anything in particular don't insist upon it after refusal. Some women are naggers, and ask persistently, "Why won't you do as I ask you?" This irritates a man. Rather bide your time, cooking meanwhile extra good meals and making yourself especially agreeable. You'll surely get your wish, even if you have to wait. Also, when you want him to do any particular thing which you know will be for his good, for heaven's sake do not say, "Do it." Rather drop a hint that you think so and so would be a good thing to do. Get him interested, and then let the subject drop. I venture to say that in a short time that man will do precisely as you wish.

Men are gregarious animals and will wander in spite of all allurements, but they are selfish enough to remain where they are best treated, and by taking a little trouble you will, as a rule, find the husband always glad to go back to the pretty home where smiles and good meals await him.—Mrs. M. E. Dalton.

Plain Fritter Batter.—This batter is used for all fritters as fruit, meat, clams, etc. One cupful flour, one-half teaspoonful baking powder, one-fourth teaspoonful salt, two eggs, one cupful milk. Sift dry ingredients together, add beaten eggs and milk and beat until smooth.

Always put a small piece of crust into the frying pan before frying fish. This prevents the fat from spluttering and makes the stove greasy and shows by its brown color just when the fat is at the right heat for the fish to be put in.

## To Glaze Bread

If you desire a hard glaze on your bread to prevent it from drying out, beat one egg thoroughly and dip a little clean white cloth in the egg. Rub this over the bread and bake as usual. If a sweet glaze is desired, sweeten the egg before putting it on. If a soft glaze is desired, dip the cloth into lard or butter and rub on the bread as it comes from the oven.

A German girl of 14 recently wrote a school essay in reply to the question: "What plans have you for your future?" She first says that when she leaves school she will get employment in a flower shop and learn how to make up wreaths and bouquets, says Springfield Republican. "As soon as I have saved enough, I shall rent a shop myself, and shall sell all the flowers that it holds. I shall then have money enough for my wishes and shall go to Breslau. There I shall find a captain in the cuirassier regiment, and we shall be married \*\*\* The emperor will invite us to a banquet. As there will be a great deal of cider, we shall feel quite comfortably ill." Then her child will be born, and the emperor will attend the christening as the god-father. "My son will be very strong and clever. I and my husband are then so overcome with joy that we die. Naturally we enter heaven, and then the same story begins again."

## Start NOW Green's Fruit Grower Readers Can Easily Make \$25 Per Week At Home

For over six years I have been advertising in Green's Fruit Grower. Scores of Green's Fruit Grower Folks are earning good money with Newcomb Looms.



### READ WHAT THIS WOMAN DOES

"Made over 11,000 yards of carpet on my loom in spare time the past three years," writes Mrs. Sadie E. Taggart, Wes. Plains, Mo. "I never weave a day that I don't make 20 yards and I do my own housework. I weigh only 115 pounds—don't tire of weaving. Loom as good an investment as an 80-acre farm."

I want all Green's Fruit Grower readers to know how you can make your time most profitable—how you can engage in a delightful and fascinating occupation in your own home, that will not interfere with your other duties, and assure you big profits for as much or as little time as you may be able to devote to it. I promise that you'll be interested. I say, and I know that every word I say is true, that you can make more money and make it more easily by weaving on a Newcomb Automatic Loom than at any other kind of home employment. My 20 years' experience with others and their letters prove what you can do.

### THE NEWCOMB AUTOMATIC LOOM

is made especially for home workers. Unlike any other loom, it practically works itself. A simple movement of the hand is all it requires of the operator. No treading—no stooping—no shuttle throwing. Just the easy work that thousands of old and young are making big money at today—at home. No experience is necessary. You will be delighted with the ease with which you can make the finest and most durable carpets, rugs, mats, draperies of every kind, and even beautiful portieres, chenille curtains and hammocks. Bear in mind also, that no cash outlay for supplies is required. Old carpets, sacks, cast-off clothing and rags all furnish material for the loom. And the results you get with such material are simply wonderful. You can be sure when you own a Newcomb, that you will have more than enough work to keep you busy. Many of our customers make from \$25 to \$35 a week weaving with the Newcomb, and you can do likewise.

Do not neglect this opportunity. Write me today for my free catalog, "Weaving Wisdom," which tells all about our looms and the extremely reasonable prices on which Green's Fruit Grower Folks can obtain one of them.

W. B. STARK, Sec'y, NEWCOMB LOOM CO.,

## AGENTS \$34 A Week

An entirely new plan for selling guaranteed hosiery for men, women and children. All styles and grades. The most attractive offer ever heard of. Agents having wonderful success. Mrs. M. Schurman sold \$900 in her spare time; L. Davis sold \$1160.40; O. G. Standiford averaging \$10 a day; Chas. Brineman making \$6 a day. Write quick—or particulars and free sample offer. THOMAS HOSIERY CO., 670 Rome Street DAYTON, OHIO

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Sturdy as Oaks  
Dingee Roses are always grown on their own roots—and are absolutely the best for the amateur planter. Send today for our "New Guide to Rose Culture" for 1915. It's free. It isn't a catalog—it's an educational work on rose growing. Profusely illustrated. Describes over 1000 varieties of roses and other flowers and tells how to grow them. Safe delivery guaranteed. Established 1860. 70 greenhouse. THE DINGEE & CONARD CO., BOX 252, WEST GROVE, PA.

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"How to Grow Roses" — a book every rose-lover should have. 10 chapters telling about soils, planting, growing, pruning, etc. Not a catalog. Price 10c postpaid includes 25c coupon good on first \$1 order. Our 1915 Rose Guide, offering nearly 400 varieties—the cream of the world's best roses, FREE. Send for it today.

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Special Announcement

We will forward, on receipt of 5c, the Fall number of the Home Dressmaker, illustrating the latest Embroidery Designs, as well as hundreds of designs of garments for Misses, Women and Children, and containing two pages on Hints on Home Dressmaking. Be sure and order this book. Address Green's Fruit Grower Co. Woman's Dept. Rochester, N. Y.

PARKER'S HAIR BALM

Cleanses and beautifies the hair. Promotes a luxuriant growth. Restores Fall to Restless Gray. Hair to its Youthful Color. Prevents hair falling. 50c. and \$1.00 at Druggists.

PATENTS

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Will Pay Reliable Man or Woman \$12.50 to distribute 100 FREE pkgs. Perfumed Borax Soap Powder among friends. No money required. D. Ward Company, 222 Institute Pl., Chicago.

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W. B. STARK, Sec'y, NEWCOMB LOOM CO., 20 Taylor St., Davenport, Iowa

Mr. C. Green's attention chased a h of which He is going to apple t growth of land. Th which I v to skin th for about up the gr trees, and set tree as a pre weeds. This pl practical, way of p hillside an under writers lo which ev time and avoid. I tree plant results su a continu on about t that I disl of losing t This is a showers in tioned gro covered w as follows. Attache of a shov set forwar shaped a root or soc plow. It the thinn strength, I cut once to stand Then I cu fifteen inc right angl I next tak spade hand pile it all o sod sectio ground mo believe. piece of w form. Tr yourself. peel a blu unless you at differen peeled it a minutes. this metho of 8 x 8 s ten hours It is bee rough, so crumble o spring the sod laid, y young tre planted, th once more inverted, y conditions plots will n vated groo inverted s prevent th the moistu young tre if one can between t during the let it lie w oration of the mown mulch, but fertility as what we George Fle

Says I. T. The app the only f round in it The use favor every with the l are firm. Now com formerly it us sour; an for it—to Were you what a gr



## Hilly Farms

Mr. C. A. Green:—In a recent issue of Green's Fruit Grower the editor calls attention to the fact that he has purchased a hilly farm, or rather a farm a part of which consists of a rather steep hillside. He is going to plant this rather steep slope to apple trees and he expects to get a good growth of tree without first plowing the land. This I do not doubt, for reasons which I will soon explain. He is going to skin the sod off the ground, presumably for about seven feet in circumference, dig up the ground thus made bare, plant the trees, and invert sod all around the newly set tree to act as a mulch and incidentally as a preventive against the growth of weeds.

This plan I know from experience to be practical, and in fact the only real feasible way of planting trees on a rather steep hillside without terrace construction, an undertaking on which horticultural writers love to dwell in minute detail, but which every day busy men, who value time and money, equally as well love to avoid. I have practiced this method of tree planting to a limited extent and with results sufficiently gratifying to warrant a continuance of this style of planting, on about one and one-half acres of ground that I dislike to plow, owing to the danger of losing too much soil after the operation. This is a country of sudden, gushing showers in springtime. The above mentioned ground is virgin soil and mostly covered with natural bluegrass. I plant as follows:

Attached to my garden plow, instead of a shovel, I have a keen cutting blade, set forward at an angle of about 45° and shaped a good deal like an old-fashioned root or sod cutter on an ordinary breaking plow. It is of course much smaller, and the thinner the blade, consistent with strength, the better and easier it will cut. I cut once on all sides of where the tree is to stand and about eight feet square. Then I cut this square into slices about fifteen inches wide. Then I crosscut at right angles about three or four times. I next take a five-tined fork with garden spade handle and rip up the cut sod and pile it all on one side of the square. These sod sections release their grip on the ground more easily than one at first would believe. In fact it is quite a fascinating piece of work, and not at all hard to perform. Try it on that hillside and see for yourself. I assure you, you will never peel a bluegrass sod any other way again unless you employ horse power. I have at different times cut a section of sod, peeled it and piled it in from ten to twelve minutes. Any able bodied man can by this method cut at least thirty sections of 8 x 8 sod and strip and pile the same in ten hours time.

It is best to do this in fall and dig up rough, so that the soil can freeze and crumble over winter; and the following spring the trees may be planted and the sod laid, grass side down, all around the young tree. If, after the tree has been planted, the ground can be lightly spaded once more, raked level and sod relaid, inverted, you will find that under ordinary conditions tree growth on such prepared plots will not fall far short of that on cultivated ground. It will be found that the inverted sod will to a very great extent prevent the growth of weeds and conserve the moisture in the ground around the young trees. Then as a further help, if one can cut or mow the remaining grass between the trees two or three times during the early part of the summer and let it lie where it falls, it will reduce evaporation of moisture from the ground, and the mown grass will not only act as a mulch, but will add humus and consequent fertility as the years go by. This is then what we call a grass mulch system.—George Flesner, Ills.

## Apple Is King

Says I. T. Swan, Nebraska, Owner of 160 Acre Orchard

The apple is the king of fruits. It is the only fruit that can be kept the year round in its natural state.

The use of the apple is growing more in favor every year, more are being used and with the largest crop ever known, prices are firm.

Now comes a new use for the old apple—formerly it was known as the best to keep us sour; and now we have found a new use for it—to keep us sweet.

Were you ever at an apple show and see what a grand display can be made? I

doubt if all other fruits combined could be arranged to equal it alone.

Apples, yes, apples king of fruits. There are endless ways of preparing different dishes which out-equal any other fruit grown.

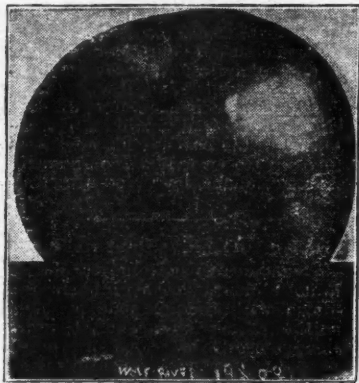
Are you an orchardist? If so can you go among your trees without a feeling that you want to take off your hat to each and every one? If you do not, your are not fit for their ruler.

To be an orchardist one must be a lover of his Maker, his fellowman, of flowers, all kinds of trees, especially the old apple tree above all, next to his Maker; if so you will be a success.

To be a successful orchardist does not require one of great learning, a professor or a graduate of some college, but will require a man with an active brain, one who is always on the alert, also a man that is not afraid of work.

A nice well kept orchard, one that is up to date, pruned, sprayed and cultivated is not only a joy to look upon, but granting a source of income equaled by few of the other farm products.

Think of an orchardist: unlike any other farm vocation, you are not forced out in all kinds of stormy weather; your harvest is not in the heat of the summer, but in the most ideal time of the whole year when the atmosphere is the most delightful. I cannot go out in my orchard when all trees are covered with blossoms without feeling a swelling of pride that comes forth equaling any other sensation I ever had. I cannot help weeping with joy. O dear friends, if you ever experience this feeling you could make it a success.



The Wolf River apple here shown, weighing but a half-ounce less than a Twenty Ounce that meets its name, was taken from a farmer's load at Webster, N. Y., by John May of Sodas. This unusually large, hardy red striped specimen so appealed to Mr. May that he had its likeness impressed by the photographer. The Wolf River is a fall and early winter apple. It is both round and somewhat conical. It is said to be the largest apple grown. By many it is declared that the fancy price it often sells for is determined by its size and highly colored appearance more than by its flavor. The tree is vigorous, open and spreading. It bears from fifth to sixth year.—Alvah H. Pulver.

Some people, because of their own happiness, feel moved to help others. But more people, out of their sorrows, learn to minister to those who need love and kindness. There is no enlarger and deepener of the life like that unwished for guest, Trouble, who carries rich gifts under his black cloak.

Nothing is easier than fault-finding. No talent, no self-denial, no character, is required to set up in this business.

## Smoky Chimneys

Even a poor chimney can be made to harbor a good fire. If its drawing powers are not good, cuddle and coax the fire past the smoking stage. Don't burn an all wood fire, but establish a glowing bed of coals, and rest assured that the poor draft will prove sufficiently strong to carry off the coal gas and the little smoke that the coals give off.

Often even a good chimney smokes when the fire is first built, because the chimney is cold and damp. If you are sure that there is a substantial layer of fireproof construction between the chimney and any framework about the house, light a crumpled sheet of newspaper and thrust it as far up the chimney as you can reach. Light half a dozen of these in succession, and you will have the chimney warm enough to start a smokeless fire.

On a damp day this same newspaper-warning process might be used to advantage, as much moisture and dampness collect in the chimney in fogs and rains.

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## How a Profitable Orchard is Managed

By Belva Augsbury.

ONE of the most promising fruit farms of Western New York is that owned by Snyder Bros., of Albion, says Inland Farmer. The rapid advancement in yield, acreage and quality of the produce raised on this farm in the past seven years proclaims Mr. Snyder as a leader in that important fruit section. In 1907 Mr. Snyder took possession of the 230 acre farm, 50 acres of which was devoted to an apple orchard, and immediately he began to set out fruit trees. Up to this fall (1913) he has set out 100 acres of fruit trees. Of this 50 acres are apples, filled in with peaches, 10 acres are of Kieffer pears, 25 acres of blackberries, 7 acres of cherries filled in with 5 acres of currants, and the remainder of the 100 acres is made up of quince, plum and greenings.

The apple trees were the old standard varieties, including King, Baldwin, 20-Ounce, Greening, Maiden Blush, Rome Beauty, Alexander, Wagner, McIntosh and Gilflower. This later variety Mr. Snyder finds is little grown, yet it is very popular in the markets of Philadelphia, where it commands a high price.

The cherries are the Montmorency and Morello, while the peaches are chosen for periods of ripening. First in order is the St. John, then the early Crawford,

tree needs plenty of plant food in order to develop naturally.

In training trees, the tree planted as it comes from the nursery has proved itself a bigger and healthier tree than the one top-worked at the start. This is especially true with peach trees. All old peach trees are cut back to 10 feet high each year, and the aim of a V-shape adhered to. The Elberta is found to need more trimming than any other variety as it bears heavily.

Every other year this orchard is carefully trimmed and the other year it is cleaned up; or to make this clearer, each year finds one-half of the orchard extensively pruned, and the other half lightly cleaned. The next year it is vice versa. On this farm we find the low tree is not liked for several reasons. It is difficult for a team to work around and hence needs more hand work. It does not allow an air circulation, and therefore easily becomes a subject for fungus. Again the low-headed trees are the early victims of frosts, while the medium height escapes the damage. The medium height tree with an open head is found to produce a better colored fruit, as well as a surer yield.

When asked how he accounted for the increase in yield, Mr. Snyder said: "It is owing to the cultivation, trimming and spraying and manuring. From early in spring the harrows are kept at work until



Spraying the 3-acre greening orchard from which the owner last year realized \$1017.00 net per acre.

Niagara, Elberta and Smock. Of the peaches the Elberta and Crawford were the only varieties which proved of value on his farm. With these two varieties he received two abundant yields which brought back \$6,000, \$4,000 of which was netted above expenses. The other varieties never paid for the trouble of caring for them.

With all his fruit, Mr. Snyder puts cherries and currants first in bringing quick money returns. On his 3-year-old cherry orchard and 2-year-old currants he netted \$1,000 above cost this year. This fruit is sold by contract to a firm in the East that furnish baskets. The firm then pays 5 cents a pound for cherries and 4 cents for currants. It speaks well for the fruit grown on this farm when we find that the same firm takes the produce year after year, and allows the highest market price in return.

Mr. Snyder has tried various methods in setting out his trees, but only one has proved itself a success. This method is to thoroughly fit a field, by plowing and harrowing, roll it and mark. The marker is 10 feet wide, and is run lengthwise and crosswise of the field. On the spot where the two marks cross at every 20 feet a tree is set. This is C. A. Green's plan. A hole is dug, the tree set in, and when covered a few forkfuls of manure is worked in the top soil. The field was previously given a light dressing of stable compost which was harrowed in.

In setting trees this way, Mr. Snyder can set trees for 2½ cents each, and use all of his space in a neat, attractive manner. By staking out a field or by plowing furrows he finds the field is not as neatly planted, while the cost comes up to 4½ cents. He also finds that a young

the middle of July, and we expect to cover the entire orchard twice every week. Manure is the main fertilizer, and chemicals are beginning to be experimented with; so far they have not been of value. Then a cover crop is sown of oats, vetch or cowhorn turnips. Clover does not seem to catch well on this farm, while vetch makes a fine return.

Tilling has been carried on to quite an extent and a marked improvement is found wherever this has been done. Mr. Snyder aims to have tilling carried out on a larger scale, as its value is easily recognized.

Each orchard is sprayed yearly. The apples are sprayed five times, peaches once, and other fruit twice. The lime and sulphur, arsenate of lead mixture is used. Besides the spraying the peach orchard is examined for borers each year, as well as for the yellows. As soon as a tree is affected in the least with the yellows, it is dug up and burned. The ground is enriched with manure, and a new tree set. The new tree seems in no way to be affected by the disease of the one previously in its place, and is as hardy as any. This year Mr. Snyder found only 15 out of 6000 trees affected with the yellows, against 45 of last year, so it seems as if he had it well under control.

Cultivation is given as a preventative of fruit disease on this farm, and of the 1200 pear trees not a one has been affected with blight.

From 800 barrels as a maximum yield on the original apple orchard on the farm, Mr. Snyder has raised the yield to 1200 barrels. This year (1913) the yield was 1000 barrels of high-grade fruit. During the seven years he has managed the farm Mr. Snyder has depended on his orchard

to pay all expenses on the farm, and it has done it. He does not sell to the average buyer, but has built up a trade in all of our great Eastern cities, where because of reliability and honesty his fruit commands prices in excess of the average produce. His fruit so far this year (Nov., 1913) has brought in \$9,000 and not an apple is sold, but all placed in storage.

Mr. Snyder has no trouble in getting help because he has an eating house built to one side, with a kitchen and all equipment necessary. This has sleeping apartments overhead. Here the help are outside of the home, happy in their own quarters, with plenty to eat and comfort in all respects. Each fall finds the old help back ready for business because he is free, with no danger of trespassing on milady's privileges. Five men work from spring until fall, and two or three are kept through the winter. At cherry and currant time 65 men and women are usually employed. From \$900 to \$1,000 is paid out each year for help on this farm for pickers, and hence it is necessary to have satisfactory methods for handling them.

## Artificial Hatching

In running any incubator, the following are important points to remember:

- Test on the seventh day.
- Temperature 103 degrees.
- Fill lamps every evening.
- Cool eggs after fourth day.
- Turn eggs after fourth day.
- Never cool below 85 degrees.
- Keep burners perfectly clean.
- Turn eggs every twelve hours.
- Do not turn flame up too high.
- Keep machine out of sunlight.
- Put in a new wick for every hatch.
- Keep doors closed during hatching.
- Be sure the incubator is standing level.
- Discontinue cooling after eighteenth day.
- Discontinue turning after eighteenth day.
- Add moisture only when air cell is too small.
- Don't let temperature run down during hatching.—Ex.

**Galloway's 1915 Strawberry Sensation**

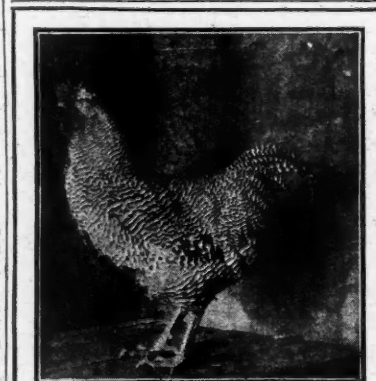
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A limited number of cockerels only at \$3.00 each.

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Poultry Department Rochester, N. Y.



# Jenks' Lucky Coin

Written for Green's Fruit Grower by HARRY STEPHEN KEELER

**F**OR as far back as Jenks could remember he had had one egregious fault—that was the fault of being superstitious.

He could remember countless times that he had been out walking with Mrs. Jenks and had stooped to pick up stray pins from the sidewalk. The only result ever achieved, however, had been the drawing down of her wifely displeasure on his own head.

As for ladders—well—sooner would he have jumped off the State Street Bridge into the murky depths of the Chicago River than to have walked under one.

And cats? He was still able to conjure up chills whenever he thought of the evening that Brown's black cat had casually crossed the street in front of him.

So, in view of these things, it was hardly surprising that Jenks, on his way to work in the silk department at "Cuttem & Co., Dry Goods," on that memorable Friday morning, should have paused to stare at the bright 1914 penny that lay on the sidewalk in front of him. He had heard too many tales already of people that had met with "wonderful runs of luck" after finding a coin on the street and keeping it for a talisman. Naturally then, he bent over, fumbled with his fingers for a moment on the pavement and secured the copper cent for himself.

As he stood erect again his eyes were greeted with definite proof that his "streak of good fortune" had already begun.

Along the sidewalk, ten feet ahead of him, an avalanche of bricks and pieces of mortar, dislodged by the high wind from the insecure cornice-work of the next building, was raining with loud crashes. Jenks clutched the penny still tighter in his right hand and felt his head with the other to assure himself that it was still intact. Vaguely, he wondered what hospital he would have been taken to had he not delayed long enough to pick up the coveted coin when his glance had first fallen upon it. Then, slipping it into his vest-pocket, he hurried on to "Cuttem & Co.'s."

The following week Jenks took a very tiny "flyer" in that most fluctuating commodity, wheat. Not greatly unlike the heart of a nervous woman who hears the broom fall over on the back porch near midnight, the price of wheat made a sudden startling jump. When Jenks finished telephoning his broker to sell, he relaxed his cramped right hand in which the singular penny had been clasped for the last two hours. After that, nothing short of a fortune could have purchased it from him.

Now Jenks had a very good reason for wishing to be on good terms with the Blind Goddess. His present family, consisting of himself and Mrs. Jenks, was very soon to become composed of three members instead of two. And since long-continued association with things feminine at "Cuttem & Co.'s" had made it the dream of life to have a son, he felt that if the coming burden of the Stork should prove to be a girl, then life, for him, from then on must be one long cheerless existence.

So, when the day arrived on which The Great Event was expected to occur, Jenks' mental condition was not such as to further the interests of "Cuttem & Co.'s" business. But the trained nurse hired for the occasion prevailed upon him to go down to the store, assuring him that should any important developments occur she would 'phone to his department.

Consequently, when at ten o'clock in the morning old Cuttem's office boy approached him with a message "dat a loidy called up" and a "pass" signed by Cuttem himself, to leave the store, Jenks seized his hat, clasped his lucky penny firmly in his right hand, and hurried to the door where he caught the first car passing the establishment.

As he got off at Chicago Avenue with a transfer in his pocket to wait on the curb for the Chicago Avenue car that would take him home, he discovered that it was beginning to rain; then he noticed with dismay that he still had on his elk-skin shoes that he wore at the store for comfort.

Now every one is aware of the fact that elk-skin soles and wet sidewalks present a combination in which the factor of friction is a negligible quantity. As a result of this scientific fact, Jenks' center of gravity

became suddenly displaced with reference to his pedal extremities, and, just as the Chicago Avenue car drew up to the crossing, he found himself sprawling on the sidewalk on all fours, his hat in the gutter—and most terrible thing possible—the precious cent rolling down the street like a cartwheel propelled by His Satanic Majesty.

From his lowly position he watched its mad flight with fascination. Gaily it bounced over innumerable ridges in the sidewalk until it collided with an ash can. There it careened and rolled over in front of a newsboy who reached down and appropriated it for himself. Then Jenks arose carefully and gradually to his feet and made his way painstakingly over to where the urchin stood.

"Boy," he said, "I lost a penny and you found it. There's a half dollar in it for you if you'll return it."

"Gee, Mister," answered the lad with avidity, "dat's a bargain. Pick her out." He opened a grimy fist displaying three copper cents.

For a second Jenks was nonplussed. Then he studied each with care. At the conclusion of his inspection he turned pale.

The dates on all three were the same! The lucky coin being indistinguishable from its fellows was lost to him forever.

At the great crisis of his life Fate must have decreed that he should have a daughter instead of a son!

Then a bright idea struck him. Which was his own penny he had no way of knowing. But another way out of the difficulty still remained. In order to be sure of having the lucky one in his possession he would have to take them all.

He thrust a half dollar in the astounded boy's hand and seized the coppers. Then, since the Chicago Avenue cars run only at intervals of a half hour and he had missed the last one, he hailed a passing cab and climbed in. After he had ridden several blocks he remembered that his new hat was still lying in the gutter at the scene of his precipitate tumble.

Reaching his house, he paid the cabby and dashed up the steps. The nurse met him at the door and conducted him to the parlor.

"What is it," he panted, "a boy or a girl?" He clutched the three coins in his right hand all the tighter—surely his "streak of luck" must be yet unbroken.

The nurse seemed to be holding back uncontrollable mirth. After what seemed to him to be an age, she answered him.

"The mother's doing fine, Mr. Jenks, considering the unusual event that's taken place here. It's—it's—it's Triplets—and all three of 'em are fine bouncing boys."

Jenks sunk weakly into the nearest chair, his hands relaxed, and his coins dropped with a metallic jangle to the floor.

## The Killdeer

Audubon's description of the Killdeer's habits at this time are so quaint that they are quoted also: "At this period, or during incubation, the parents, who sit alternately on the eggs, never leaving them to the heat of the sun, are extremely clamorous at sight of an enemy. The female droops her wings, emits her plaintive notes, and endeavors by every means she can devise to draw you from the nest or young. The male dashes over you in the air, in the manner of the European Lapwing, and vociferates all the remonstrances of an angry parent whose family is endangered. If you cannot find pity for the poor birds at such a time, you may take up their eggs and see their distress; but if you be at all so tender-hearted as I would wish you to be, it will be quite unnecessary for me to recommend mercy." This is good advice, that I hope will be followed by every boy and girl who reads this, in fact by every person.

Pittsburgh, Pa., October, 1914

Green's Fruit Grower:

I am not a fruit grower, but a mill man. In the way of encouragement I will say that I read your magazine with pleasure and profit. Any article that is over the name of Charles A. Green I regard as advice from an elder brother, and I firmly believe that he is sincerely honest in everything he writes.—Chas. F. Sermin.

**Michigan Orchard:**—Mr. F. A. Ireland has an orchard 40 years old; some of the trees have decayed, and as you will see by diagram those marked with a cross are very poor value. About 15 years ago the missing trees were reset half way between the rows, and only those marked O are living. Is it advisable to set young trees in the missing places?

Would sowing rape and pasturing hogs, as has been doing for the past five years, or sow alfalfa for a permanent pasture for hogs, be all right? and when is the best time to sow?

What the best varieties of apple trees to plant for Michigan?

Reply: It is more desirable to have all the trees of one age and all planted at the same time than it is to set out young trees in an older orchard, and yet young trees sometimes are set out in older orchards with fairly good results. The trouble is that no one gives the same attention to an old orchard with some new trees in it that they would in an entirely new orchard with young trees all set at one time.

I have found benefit by pasturing hogs in an orchard. I would not sow a orchard for permanent pasture, for I believe in cultivating the orchard.

I would prefer that you ask your state experimental station what varieties of apples are best to plant in Michigan. I assume that Baldwin, Greening, Spy, Banana, McIntosh Red and King and others of those old favorites would succeed well except possibly some of them might not be hardy enough for the northern part of Michigan.

## Plant Trees this Spring for Shade and Fence Posts

The coming spring promises to be exceptionally favorable for the planting of trees, says B. O. Longyear, Colorado Agricultural College, Fort Collins, Colorado. Why not plan now to set a few trees on any unused corners or pieces of land, and in a few years have timber for fence posts, poles, or fuel? The black and honey locusts are desirable for their quick growth and durable timber. The

white willow is particularly useful in making quick fence posts and poles, and when seasoned forms a very good summer fuel. The post, from this willow and from the cottonwood may be treated with gas tar creosote applied hot with a brush or, better still, by the open tank method, which will make them last for many years.


For shade trees about the home the elm, basswood, white ash, Norway maple, black walnut, and burr oak, while slow growing, are much to be preferred in the long run to the short-lived but rapid-growing Carolina poplar and cottonwood.

## Auto Have Satisfied Her

Customer—Mr. Cleaver, how do you account for the fact that I found a piece of rubber in one of the sausages I bought last week?

Butcher—My dear madam, that only goes to show that the automobile is replacing the horse everywhere!

"Have you done your share toward making life more cheerful for anybody?" asked the genially serious person. "I have. I gave a crowd of people the time of their lives this morning. My hat blew off and I chased it two blocks."—Washington Star.



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that will grow, are true to name and are guaranteed to reach you in a good growing condition. Grown on rich soil which gives them a large vigorous root system. Satisfaction guaranteed. Write for price list.

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### Cycle Machines Bring Results—Read this letter.

Gentlemen:—It might be of interest for you to learn that this season the Poultry Item conducted quite an extensive incubator contest, offering premiums for the best hatches from incubators bought from Poultry Item advertisers. We are pleased to notify you that the Cycle Hatcher is the winner of this contest, making the record of 100 percent and the only machine in the contest making so large a percentage. The Poultry Item, Co.

### Our New Illustrated Book "Poultry Profits" Free

tells all about Cycle Hatchers and Brooder-Hatchers, supplies and appliances for poultry keepers. It gives a new light on poultry raising. Filled from cover to cover with valuable short cuts on poultry keeping. Free for the asking. Send a postal today for your copy.

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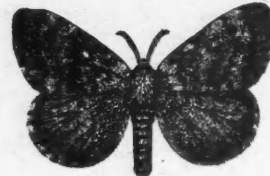
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# Important Spray Formulae

### Fungicides

Arsenate of lead, Paris green and London purple have been the leading forms of arsenic used to poison insects which consume the surfaces of leaf or fruit. Of these, arsenate of lead is preferred because it adheres well, is easily kept in suspension and has slight caustic properties, even when used in excessive amounts. Commercial brands should contain not less than 12½ per cent. arsenic acid. With brands containing 15 to 20 per cent., proportionately less is required than is given, as the amounts are based on a 12½ per cent. paste. It is well to paste the material with a small amount of water before diluting for use.



Gypsy Moth.

**Arsenate of Lead.** Two to 3 pounds to 50 gallons, or 5 pounds to 50 gallons of water. The stronger formula is never required except for the most resistant caterpillars.

**Paris Green.** One-third to ½ pound to 50 gallons. It is commonly used with Bordeaux. When applied with water, the milk of lime from 1 pound of stone lime slaked should be added to each 50 gallons. (Paris green should not be mixed with lime-sulphur for summer spraying.) In dry form Paris green may be used at the rate of 1 pound with 10 to 50 pounds of land plaster, air-slaked lime or flour. It may be sifted through a bag or applied with a bellows.

### Bordeaux Mixture I

Copper sulphate (blue vitriol or blue stone), 4 pounds; stone lime, 4 pounds; water, 50 gallons. (If hydrated lime is preferred use 6 pounds.)

Prepare a stock solution of copper sulphate by dissolving the copper sulphate in water, using one gallon of water for every pound to be dissolved.

Place the copper sulphate in a burlap sack and suspend in a barrel or wooden vessel of water to the depth of a few inches until dissolved. (Do not place entire amount under water.) Place in the spray tank one gallon of this stock solution to every pound of copper sulphate to be used and fill tank about half full of water. Prepare the required amount of lime to be used for each spray tank full by slaking the lime and adding water until a milk of lime is produced. Strain this into the copper sulphate solution, keeping the mixture stirred thoroughly. Add water to fill the tank and apply.

### Bordeaux Mixture II

Copper sulphate, 2 pounds; stone lime, 2 pounds. (If hydrated lime is preferred use 3 pounds); water, 50 gallons.

To be used instead of Bordeaux I on peach, plum, cherry and other plants with tender foliage.

### Self-Boiled Lime, or Lime-Sulphur Wash II

Stone lime, 8 pounds; flowers of sulphur, 8 pounds; water, 50 gallons.

Place the lime in a barrel, and pour on enough water (about two gallons) to start in slaking. Then add the sulphur and about two gallons more of water. Stir thoroughly and do not let the mixture cake on the bottom of the barrel. As soon as the slaking of the lime is over dilute to 50 gallons of water and strain through a sieve of 20 meshes to the inch, working all of the sulphur through the strainer.

(This mixture will not destroy San Jose scale. Use lime-sulphur I or commercial solution for this purpose.)

### Insecticides

**Whale Oil Soap.** Whale oil or fish oil soap, when used at a strength of 1½ to 2 pounds per gallon of hot water, is a convenient remedy for scale insects, if applied during the late winter or early spring before buds start. For summer use in the control of plant lice, pear psylla, etc., the maximum strength is about ¼ pound per gallon of water, and should be used at much less strength for tender foliage.

**Soap Solution.** Ordinary laundry soap, used 1 pound to 1 gallon of water, applied before buds start, is an effective remedy for San Jose scale; used at strength of 1½ pounds to 4 gallons it is effective against aphides or plant lice, but might have to be diluted to some extent upon very tender foliage.

**Kerosene or Petroleum Emulsion.** One-half pound of hard soap, 1 gallon of boiling soft water, 2 gallons of kerosene. The soap is dissolved in the hot water, the kerosene is added, and all churned vigorously through a pump for some minutes until emulsified. The emulsion is diluted for use from 4 to 15 times.

It should be used upon peaches and plums not stronger than 15 per cent. oil in winter or early spring and not more than 10 per cent. oil upon foliage in summer.

To get 10 per cent. of oil add 17 gallons of water to above formula.

To get 15 per cent. of oil add 10 gallons of water to above formula.

To get 25 per cent. of oil add 5 gallons of water to above formula.



Oyster Shell Scale

**Tobacco Water.** One-half pound of tobacco stems or leaves, steeped in a gallon of boiling water and later diluted with 5 to 10 gallons of water, makes a spray particularly useful against plant lice in summer.

**Commercial Tobacco Extracts.** These are rapidly coming to the front for use against plant lice and pear psylla. The strength of dilution required depends on percentage of nicotine present.

Grades, such as black leaf "40," if used according to directions upon packages, are effective in controlling aphides or plant lice, pear psylla and pear thrip, and can be applied with other fungicides and insecticides without impairing their efficiency.

### Lime-Sulphur Wash I

Sulphur, 15 pounds; lime, 20 pounds; water, 50 gallons.

Place the lime in about 10 gallons of hot water in an iron kettle, then gradually stir in the sulphur. Boil thoroughly for one hour, keeping the mixture well stirred, adding more water if necessary to keep from sticking. Strain, dilute with water to make 50 gallons and apply.

(This mixture corrodes brass and copper and a pump with brass fittings should be cleaned by running clear water through it after each day's spraying. Never boil the wash in a copper kettle.)

### Home Made Concentrated Lime-Sulphur Solution

Lump lime, 50 pounds; sulphur, 100 pounds; water, 50 gallons.

Use best grade of lump lime obtainable. Should test 90 per cent. calcium oxide and be free from impurities.

Heat to boiling in cooking vessel about fifteen gallons of water, then gradually place in it the fifty pounds of lime. As the lime begins to slake add the 100 pounds of sulphur. After the slaking of the lime has ceased, add enough water to make the full amount required by the formula. If fire is used, additional water will need to be added to keep the mixture to the re-



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quired amount. If steam is used this will not be necessary. The mixture should be kept at the boiling point for practically one hour or until all the lime and sulphur are dissolved. Constant stirring will be necessary. A measuring stick graduated according to the capacity of the vessel used will aid in keeping the volume of solution up to the required amount. When additions of water are necessary, hot water should be used.

Place in an airtight barrel when cool, and use as needed. A hydrometer reading should be made of the prepared solution, and dilutions made according to table.

**Commercial Lime-Sulphur Solution**

This solution can be obtained on the market and is ready to apply when properly diluted with water. A hydrometer reading should be made before using. 32 degrees Beaumé is considered as standard, and commercial brands should give this reading.

Dilute according to table herein given.

Table I

Dilutions for Dormant and Summer spraying with lime-sulphur mixtures. (From Bulletin No. 330 New York Agricultural Experiment Station.)

Reading on hydrometer	Number of gallons of water to one gallon of sulphur solution	
	For San José scale	For summer spraying of apples
Degrees Beaumé		
35	9	45
34	8.75	43.25
33	8.25	41.50
32	8	40
31	7.50	37.75
30	7.25	36.25
29	6.75	34.25
28	6.50	32.75
27	6	31
26	5.75	29.50
25	5.25	27.75
24	5	26
23	4.50	24.25
22	4.25	22.75
21	3.75	21.25
20	3.50	19.75
19	3.25	18.25
18	3	17
17	2.75	16
16	2.50	15
15	2.25	14
14	2	12.75

**Old Orchard Revived**

I have just bought a place of 2½ acres with about 30 apple trees that have had no care for 12 or 15 years. If I should should send you photos of some of these trees could you give me advice about trimming and pruning?—F. W. Carey, Mass.

Reply: The photographs you speak of sending would not be very helpful in giving you advice about pruning the old neglected apple trees. Every tree in your orchard would be a test of the ability of a skillful pruner to decide what should be done with it, and each tree would have to be pruned somewhat differently from the others. In other words it is impossible to make an old neglected apple tree over into proper shape. Nearly all old apple trees have branches extending skyward.

Some pruners would decide to dehorn these trees by cutting off the branches, leaving simply short stubs 3 to 6 or 8 feet long. Then new tops would be thrown up from these stubs or horns. This would prevent the trees from bearing fruit for several years and the branches would be too numerous and would have to be thinned out, thus you see there are some objections to this course of dehorning. If you do not dehorn the trees, about all you can do is to cut out the dead wood remaining, and the suckers or superfluous branches, and scrape the rough bark off the body and main branches with a hoe, being very careful not to wound the bark.

Where the orchard is given proper treatment a little pruning is done each year from the time of planting onward. If you remove a large quantity of the branches from the apple or any other tree in one season you are apt to do the trees injury. Paint over all wounds.

**A Dreadnaught in Sprayers**

—such is our "Dreadnaught" Duplex Power Sprayer. It delivers a hurricane of death to orchard pests of all kinds for years and years, without a hitch. In a recent test a "Dreadnaught"—made just as we'd sell it to you—worked against 22½ lbs. pressure for 200 hours, pumping a quarter of a million gallons, with no care except for lubrication and repacking. If wear had been taken up, the pump would undoubtedly have operated 2,000 to 3,000 hours. This test proves that with ordinary care the "Dreadnaught" should last ten seasons or more. Requires less than 1½ H. P. to deliver rated capacity—5.3 gal. per minute. Has heavy brass plungers, outside packed; non-corroding; uses either rotary or reciprocating agitator; all parts accessible; width 18½ in., length 22 in., height 18 in.—powerful, compact, durable. Ask your dealer to show you


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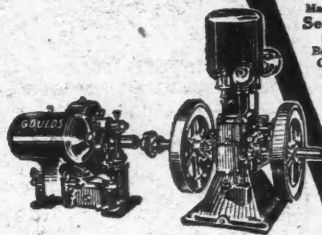
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(Signed) Ora Samuel Gray, Amherst, Mass., Dec. 8, 1914.

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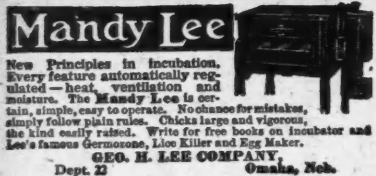
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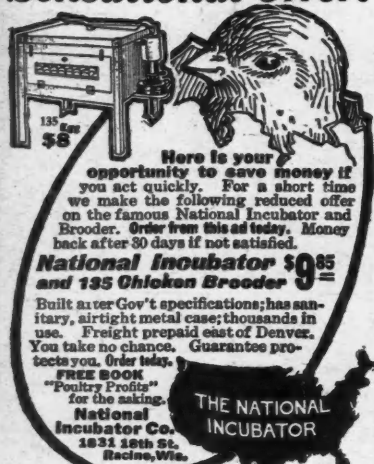
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## Poultry Dept.

### Feeding for Winter Eggs

Editor of Green's Fruit Grower:—Getting eggs in winter is the poultry problem of the farm. But did it ever occur to you that fowls like a variety? This is more especially true when the weather becomes cold and they are not allowed to free range for themselves. Fowls will live, even in winter, on corn and water given them at irregular intervals, but under such care they cannot lay eggs. Eggs are what makes money. Notice how much better you feel after eating a good meal, filled with a variety of various articles. Fowls are exactly as partial, and will respond as readily. No one method exists which can be used under all circumstances. But the plan outlined here may be used with a degree of success in a majority of cases.

meal, wheat bran, and wheat middlings. Moisten the mass with skim milk until crumbly. Feed while warm. These feeds in dry grain make a very good dry mash for afternoon hopper feeding, to which are added five parts meat scraps, one part oil meal. Give the fowls all the green food they can clean up before the following noon. Keep the oyster shells before them and see that they have plenty of grit.

Fowls go to roost very early, making it necessary for them to eat before sundown. This means feeding about 4 o'clock, so they can see to pick up the grain. An empty crop is a poor bedfellow, so give the hens plenty of cracked corn and oats to keep them warm during the night. This process of digestion keeps the hens warm and comfortable.



This is a beautiful and artistic photograph worthy of the attention of a great artist to be painted upon canvas. Notice the simplicity of the scene. Simplicity is considered necessary for the highest art. If numerous articles such as barrels, boxes, baskets or other items were included in this photograph it would not be so artistic as it is as shown in the photograph. The dress, the pose and the expression of the girl are ideal, as is the pose of the chicken she is feeding. Here is an object lesson for photographers and artists.

In the morning the fowls are hungry and ready to work for their food. It is well to keep them as busy as possible. Work keeps them warm, healthy, and contented. With this in mind, scatter mixed grains in the litter. Be rather sparing of the feed in the morning. A half a quart of finely ground oats is a good thing to mix with the other grain, for it will keep the hens scratching and searching for two or three hours. The grains may be mixed in the proportion of 3 pounds corn, 2 pounds wheat, one pound ground oats, to which might be added one pound buckwheat and one pound barley. Have the fresh water on hand bright and early.

At the midday meal is the time to provide those appetizing mixtures so greatly relished by the fowls and which make egg production easy. Take the scraps of meat, bread, and vegetables, of oatmeal from the table, mix them with corn

A little care and consideration, and winter egg production is easy.—Earle W. Gage, N. Y.

Gather the eggs as often as possible in cold weather. This is especially important, if they are to be used for breeding purposes. Hatching eggs should never be allowed to become chilled, if you expect to get good results.

The freshest eggs are the first to hatch. In buying eggs it is well to bear this in mind, and stipulate that all one shipment shall be of about the same date, say within three days.

Do not try to force the egg yield with stimulants. They are liable to excite and inflame the linings of the digestive organs. Good housing and good feed will produce eggs in a flock of an age to lay. Hens will lay in the spring, even at the age of five years, but winter eggs in paying numbers can be expected only from hens not over two years old.



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### Warm Poultry House

A great deal of the success with poultry in the winter time depends on the way the houses are built for warmth, but, when we speak of warm poultry houses we do not mean it in the same sense that we do in speaking of a dwelling house being warm. To have a poultry house warm enough so that water will not freeze in the coldest weather is a warm poultry house and is plenty warm enough. If the temperature does get down a few degrees lower than freezing point, but little damage can come from it, even if the fowls are of the large comb varieties, for they are not damaged much by this. Fowls can safely run out when the thermometer is 10 degrees above zero and still be comfortable. Due consideration should be given to the fact that the fowl when on the roost is not active, and that it will have to have a higher temperature than when it is active and scratching around outside. Lower animals are not so susceptible to changes in temperature as man, for we know that turkeys, ducks and geese seem to enjoy running through the snow when the weather is quite cold, and one is liable to conclude they are comfortable in all kinds of weather. The discomfort that comes to hens roosting out of doors in cold weather is that their combs and wattles freeze, but beyond this they are quite comfortable.

The object in having a warm house is to stimulate the hen and induce her to lay eggs during the cold months. If they are constantly kept warm and well fed they will lay eggs, while if they are left out of doors in the cold, the food they consume is employed to keep them warm and there is nothing left for the production of eggs. Bearing these facts in mind it is not difficult to make a poultry house warm. A single thickness of lumber will do very well, and it can be made much warmer if it has a lining of tar paper. If the poultry house is large, the roosting quarters should be partitioned off so that they are just large enough to give roosting room, with ventilation, but be free from drafts. Then the heat of the fowls will assist in keeping the temperature up while they are inactive and need it. In the daytime they will walk around and will exercise and will then need more commodious quarters.

### Poultry Notes

Early hatched pullets are the best for winter layers.

Keep oyster shells, charcoal and suitable grit before the hens at all times.

Vegetables of some kind should be fed the poultry the year round—cabbage, potatoes, beets, turnips, etc.

Poultry droppings are possibly not fully esteemed for their value as a fertilizer in the field and garden.

When the mornings are cold, take the chill off the drinking water, but do not make it warm.

The early hatched chick lays the next winter's eggs.

Where feather-eating is practised try giving the fowls some sulphur, one teaspoonful in the soft feed of every three fowls, two times a week.

The incubator lamp should be filled and cleaned every day at noon. This will give ample time to regulate the flame by night.

You should have some hens setting or your incubator running in a few days. The early chicks will be the money-makers.

If a hen has to sit on a cold roost all night, with all the warmth she gets drawn from within, she will not be likely to lay the next day.

Watch the water supply and see that the hens drink only pure water, and that they get plenty of it, also that they get it in clean vessels.

Laying hens must have bread or milk; eggs cannot be produced without nitrogenous materials in some shape. Keep a supply of bone meal or oyster shell convenient.

Poultry diseases in the winter are always caused from filth, exposure to extremes of temperature, dampness or improper feeding.

Cut a head of cabbage in halves and hang where the hens can help themselves. The green food will be greatly relished and is a necessity to their diet.

### Testimonial

Haverhill, Mass., Oct. 27, 1914  
**Mr. Charles A. Green:**  
I think the Fruit Grower is the best fruit journal I have ever read. Find enclosed \$1.00 for three years.—**Frank H. Holmes.**

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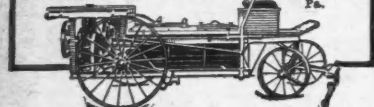
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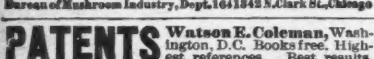
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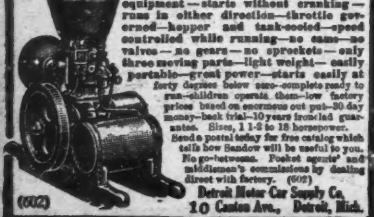
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## Answers to Inquiries

Reply to C. L. Rust, Mich.

Dear Sir—Best Apple Book, Etc.—The New York State book on apples published by J. B. Lyon & Son, Albany, N. Y., is the best. It costs, we believe, \$5.00. John J. Thomas' book is good, which costs much less. The book by Thomas does not have the colored plates.

The Delicious red is better color and deeper red than Stayman's and is much the same quality, perhaps not quite as large as Stayman's. But neither Stayman's nor Delicious has been fully tested in this state for market varieties; they are great apples for the west and middle west.

McIntosh Red is the best and most beautiful apple I know of, but not a very long keeper. I am eating Mother and Melon apples, the best of all in quality, but scarcely known to most fruit growers. They are a reddish apple, beautiful and attractive, but could not be grown for market so cheaply as Baldwin. Do not know where trees of this variety can be secured. There is no demand for the trees because nobody knows much about them.—C. A. Green.

#### Pruning Nut Trees

Reply: Yes, the chestnut tree or any nut tree or other tree may be pruned at this season, but do not prune it at any time of the year unless it seems to need pruning.

Some people fall into the mistake of supposing that every tree needs pruning and spraying, but such is not the case. It is for you to decide whether your tree needs pruning and for others to decide whether their trees and shrubs need spraying. So much has been said about pruning and spraying I fear that many of my friends feel that they must spray or prune every year without first learning whether either spraying or pruning is needed.

If you wish your tree to be low-headed, it will be well to cut back the branches to the extent of about half of last season's growth, and to see that the branches are left in condition to form a well balanced top. But if you desire a high topped tree, it may be that the tree does not need pruning at all and may not for several years to come.

#### Neglected Grape Vines

Green's Fruit Grower:—Will you kindly tell me through the columns of your paper what to do with grape vines that have been neglected for at least ten years, having been allowed to run on the ground or climb trees. The varieties are good, such as Concord, Delaware, etc. Is it worth while trying to do anything with them?—Mrs. L. S. O., N. Y.

Reply: Yes, such an old neglected vine, if of desirable variety, as you mention, is worth caring for. It can easily be brought back to productiveness and beauty. One way to renew the vine would be to cut off all the old canes within a few inches of the ground, allowing only two or three, or at the most four canes of next season's growth to remain to cover the trellis. These three or four canes the second year should be cut back to three or four feet, all varying with the system of pruning which you decide to follow, and trimmed each year thereafter. I have suggested the fan system of training, which is to spread the three or four canes over the trellis, and after the second year to cut back the lateral branches to two or three buds each.

#### A Basket of Apples

Mr. Chas. A. Green:—I am forwarding to you this day per express a basket of apples for identification. Each apple is numbered, and if you'll kindly give me the names as per number, I shall be most grateful to you for same. Being a regular subscriber to your paper, Green's Fruit Grower, I am thus presuming on your generosity.—Thos. H. Boddy, Pa.

Reply: The basket of apples came in fine condition. Each location or state has its local variety of apples, which is somewhat different from every other locality. What may be a winter apple at Rochester is often a fall apple in Pennsylvania or New Jersey. Apples grown at Rochester which I would readily recognize I might not recognize when grown in Pennsylvania or Ohio, owing to differences of size, quality and color.

My opinion is that there is not a man in this country who could identify a large number of the about forty varieties which you submit to me. The person best qualified to decide in regard to varieties is connected with the United States Pomological Division of the Department of Agriculture at Washington, D. C., but even this individual could not be expected to name more than half of the varieties you submit.

I suspect that many of these varieties are seedling fruits known only to your locality, some of which may be of great value in your state. No. 8 appears to be Maiden's Blush, No. 6 somewhat resembles the Spy, and No. 23 resembles Duchess. The immature condition of many of these specimens makes it all the more difficult to correctly name them.

#### Trimming Evergreen Hedges

Green's Fruit Grower:—Will you kindly give me directions for care and trimming of evergreen hedges? I have a large hemlock hedge that is too large and I am at a loss to know whether it will answer to trim it back, and if so at what season of the year it ought to be done.—H. J. Davis, N. H.

C. A. Green's Reply: Evergreen hedges, and in fact all hedges, should be pruned each year and usually several times each year, with a pair of pruning shears, the blades of which are about 18 inches long. It takes but a short time to prune a long hedge. Where any hedge, evergreen or otherwise, is neglected and not pruned for several years, it is difficult and often impossible to get it back into proper shape. Evergreen trees cannot be dehorned, that is they cannot be cut back seriously, as can many other deciduous trees. If you cut off large branches or cut off the tops of a neglected evergreen hedge you mar its beauty forever, whereas you might do such pruning with far greater success where the hedge is not an evergreen, but is of privet or something of that class. Evergreen trees and hedges may be pruned any time during winter or early spring.

#### Newton Apples vs. Stayman's

Green's Fruit Grower:—I have just finished reading the December number of your journal. It contains more information on the apple business than I have ever seen in any fruit journal before.

I am taking the liberty of asking you for a bit of advice. This spring I planted five hundred Yellow Newton apples, and have since been advised by leading authorities that the variety will not produce in commercial quantities in this locality.

I have decided to change them to Stayman's Winesap, and what I would like to know is whether it would pay better to pull out the Yellow Newton and plant new trees, or to top graft them to the Stayman?—Chas. J. Muttart, Pa.

Reply: Thanks for your encouraging words. It would be cheaper for you to dig up the trees you have planted and replace them, but if you have an experienced man who succeeds well with grafting, I advise you to try that method.

You must not expect that every grafted tree is going to be a success, as you will have to graft some of them again, as some of the scions will get broken off and some will perish. This has been my experience.

I am not sure that you are wise in desiring to change an orchard entirely to Stayman's Winesap. Stayman's is a great apple for the west and middle west, but it has not been tested largely in Pennsylvania and other eastern states. I would advise you not to confine yourself to one variety, but to plant at least three or four varieties that have done well in your locality. You can buy first class apple trees now at \$15.00 per hundred which is a very low price.

#### TESTIMONIAL

Cecil, Pa., March 23, 1914.

Mr. C. A. Green: I have been a subscriber of your valuable magazine for about one year, but did not take much interest in it until this last six months. Now I look for the paper every month and read it over several times. In my opinion it is worth its weight in gold not only to the fruit grower, but to those with a dozen fruit trees.—Geo. Montooth.

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## Rules for Orchard Practice

By W. I. Green, in Ohio Bulletin 108.

**Objects of pruning.** Definite and inflexible rules for pruning cannot be given, but one can easily learn to adapt different operations to special cases, by keeping in mind that the objects sought are to shape and balance the tree in its early stages; later to open up the center to sunlight, and in old age, where there has been neglect, to prevent decay as well as to remedy errors. In rejuvenating an old orchard pruning is the first thing to be done.

Scraping the old bark from the body of the trees is thought by some to be the next important operation, but if spraying is thoroughly done there is little need of scraping. The bodies and large limbs may be washed with a solution of 3 or 4 pounds of concentrated lye in a barrel of water with better results than scraping.

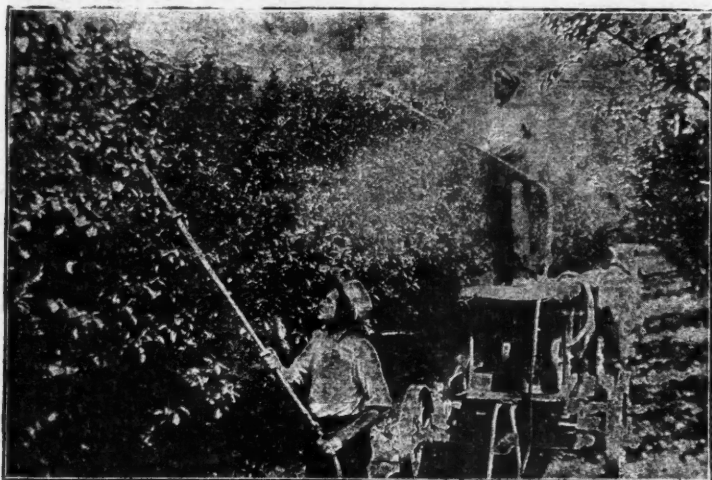
## SPRAYING

The Spray Calendar (Bulletin 199) outlines the plan of operations for the control of insects and diseases.

**Spray mixtures.** It is well, in all cases, to plan for warfare against the San Jose scale. Its presence does not require much extra effort, as the same materials, viz., lime and sulphur, are used against both the apple scab and scale. The addition of arsenate of lead makes a compound which is efficient against the

fact that one of the objects of thinning is to remove defective fruit. All apples showing signs of any kind, hail marks, spots of scab, spray or frost injury, or any other deformity should be removed even though the crop may be light. Evidently this cannot be done properly until the fruit is nearly half grown. The overloaded trees may be thinned first, however, taking care to look for fruits which have any sort of deformity. How much good fruit to take off no one can say, but it should always be a little more than seems necessary. The past season the removal of half the fruit from heavily loaded trees was not sufficient. When a tree with a spread of branches of 25 or 30 feet gives promise of a crop of more than 20 bushels, thinning is needed to keep within that limit. Some trees may easily hold a crop of more than 20 bushels, but rarely is this the case if none but first-class fruit is desired. When we have followed the rule to allow the apples to remain as near together as 6 to 8 inches, too many have been left. Nothing short of observation and practice will enable any one to thin apples properly, and the error is nearly always on the side of leaving too many.

**The coloring of apples.** The coloring of apples is influenced greatly by thinning. It is well known that when two pickings are made that half colored fruits left at the first picking will, within two



**Fruitful dwarf apple trees 23 years old.** Dwarf apples do not receive the consideration they deserve. They possess two great advantages over the standards. First, they bear sooner, and thus give the grower quick returns on his investment. Also the trees are lower, so the pruning spraying and harvesting can be done more thoroughly and with less expense. The distance to plant dwarfs depends considerably on the soil and on the variety. A slow grower, like the Duchess, would do well as close as ten feet apart in the row; but Baldwins and other large growers should be set at least eighteen or twenty feet apart. On our farm we have thirty dwarf trees twenty-three years old. They are thrifty and bearing good crops; also a promising four year old orchard. The photo shows the twenty-three year old trees set in a single row ten feet apart.—Arthur A. Macelwane, Ohio.

above and the apple worm canker worm and sooty fungus. Bordeaux mixture and Bordeaux and iron sticker, with an arsenical compound, are likewise efficient. The injury done to apples by Bordeaux in the unfavorable season of 1910 has created a strong sentiment against it in favor of lime and sulphur. It is probable that Bordeaux, because of its cheapness and simplicity, will still be used in the home orchard, but commercial growers, quite generally, seem to favor the lime and sulphur compound.

**General effects of spraying.** So far as efficiency against disease is concerned it matters but little whether Bordeaux or lime-sulphur is used, but the former causes russetting of fruit and sometimes injures the foliage. Thorough and judicious spraying does more than to protect the fruit against insects and diseases. It preserves the foliage, thus promoting the health of the tree; increases the size of the fruit and heightens its color.

Well sprayed trees have increased power to withstand untoward influences of all kinds.

**Manner of spraying.** The manner of spraying is important. Good work cannot be done with a pressure of much less than 100 pounds. This is easily secured with a power sprayer and with some difficulty if the best makes of hand pumps are used.

## THINNING

**Thinning apples.** The necessity of thinning apples is far greater than is commonly known. The time to do this work would be when the apples are about the size of marbles, if it were not for

or three weeks, increase in size and put on more color, rivaling the specimens first removed. Earlier thinning accomplishes this result in a still more marked manner.

There is also a greater number of wind-falls from unthinned than from a thinned tree, partly due to decrease of defective fruits by thinning, also to lessened drain upon the vitality of the tree.

Owing to the necessity of producing a better grade of fruit than formerly, and of more careful packing, thinning the fruit cannot be neglected.

Thinning is one of the measures to be taken to induce annual crops, but alone it cannot produce the desired result, nor can varieties in which the habit of fruiting in alternate years is strongly fixed be much changed in this way.

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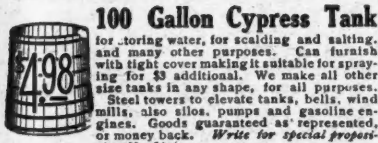
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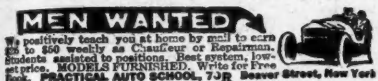
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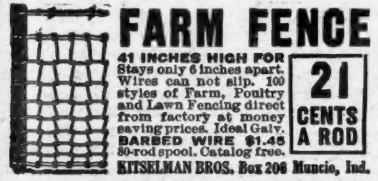
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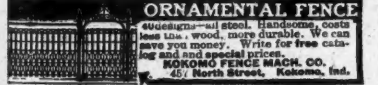
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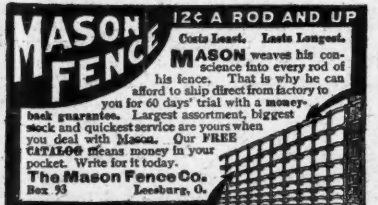
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## How to Spray Pear Trees

**Pear Slugs.** Small shiny, dark green or almost black slug-like larvæ that skeletonize the leaves in June, a second brood appearing in August. Spray as soon as they appear with arsenate of lead, 2 pounds to 50 gallons of water.



Pear Psylla.

**Pear Psylla.** When abundant this insect is found in the axils of pear leaves in the early spring and later upon the under side of the leaves. In midsummer a sweet "honey dew" covers the insect and is secreted in such abundance as to often completely coat the foliage. A fungus often thrives in the "honey dew," giving it a dark, sooty appearance. Control is by contact sprays only, although in winter when the adults are partially dormant many of the adult winged insects may be killed by scraping off and burning the loose bark under which they hide. The following measures are recommended:

1. Clean culture to prevent "flies" from wintering in accumulations of matted leaves and weeds.
2. Remove rough bark to discourage "flies" from wintering on the trees and to render them more exposed to spraying mixtures. Bark is more easily detached immediately following a wet period. Care should be taken not to cut into the live tissues.
3. Spray thoroughly to kill the "flies" with black leaf "40," using  $\frac{3}{4}$  pint to 100 gallons of water and 3 pounds of soap, during a warm spell in November or December preferably, or during March or early April. Select a day when the mixture will not freeze on the trees. Some growers prefer a miscible (soluble) oil, using 1 gallon diluted with 15 gallons of water. This treatment should only be made in the spring.

4. During the latter part of April or early in May, just before the blossom clusters open, spray trees thoroughly with lime-sulphur mixture at winter strength to destroy the eggs.

5. Spray the trees thoroughly just after blossoms drop, to kill the newly-hatched nymphs, with black leaf "40," using  $\frac{3}{4}$  pint to 100 gallons of water and 3 pounds of soap or kerosene emulsion diluted with 8 parts of water. Direct the spray into the axils of the leaves and fruits and wet both surfaces of the leaves.

If the work is well done it is not necessary to carry out all of these measures each year. If the trees have been carefully scraped a combination of treatments 3 and 4 or 3 and 5 should be sufficient. Some growers have entirely controlled the psylla with treatment 3 alone, to kill the hibernating "flies."

**Pear Thrip.** A minute insect that feeds upon the swelling or opening blossom buds. It is so small that the injury only is noted and often the insect responsible is not seen. **Remedy:** Spray thoroughly with lime-sulphur solution just before blossom buds separate at the tips, applying it at the strength used for San Jose scale (see table), followed by two thorough sprayings of black leaf "40,"  $\frac{1}{2}$  pint to 100 gallons of water. These two sprayings may be applied before the blossoms open.

**Fire Blight.** In summer blackened shoots bearing dead leaves and shriveling fruits often attract attention. This disease is bacterial and during the summer may be spread by pruning tools unless disinfected. It is also spread by leaf and bark puncturing insects. Spraying is not effective. Cutting blighted limbs and the cutting out of blighted spots on the trunks offer the only protection, and this work should be carefully done in late winter and again at the first appearance of blight in spring or early summer. Corrosive sublimate, 1-1000, is used to disinfect cuts on limbs and on the tools used in pruning.

**Pear Scab.** Spray susceptible varieties with 3-3-50 Bordeaux mixture just before the blossoms appear; repeat after the blossoms drop and again three weeks later.

Tekamah, Neb., Nov. 25, 1914.

Mr. Chas. A. Green:—I can get more moral good out of Green's Fruit Grower than from any sermon out of the pulpit.—Walter Eckley.



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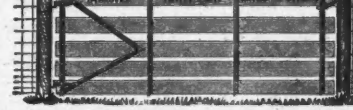
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## Aunt Hanna's Replies

## This Girl Fears She May Be an Old Maid

Dear Aunt Hanna:—I am a girl nineteen years old, I am five feet and eleven inches tall. I live in the country with my father and stepmother. My sisters are all married and my brothers are all married but one. I have three of each. My brother that is single is far away from home.

I have never had a beau. When I get acquainted with men they seem so nice, but after I see them three or four times they do not pay any more attention to me than if I were a stranger.

There was a certain gentleman that I knew last winter. He showed that he cared for me and I loved him at the time. He was so friendly when I met him anywhere. I always said if a boy came to see me he would have to ask me if he could come, so I never did ask this man to call. Since then my father, stepmother and myself have been to spend two days at his home. When I left each time I never even said goodbye to him. The rest of the family returned our visit. They live two miles from here. I know I didn't do right by not asking him to call. I believe when I see him again I ought to ask him to forgive me and also ask him to call. He does not go to see any other girl and hasn't since last fall. What do you think I should do? I love him now. I don't think I could love any one else as I do him. He is very bashful and I am too. I believe I will have to say something to him to let him know I care for him. My sisters tell me it is my own fault in not having men callers. They say I am too modest. Last winter when this fellow and I were so friendly, when we were at gatherings two different times, he bought my supper each time and I thanked him and yet I did not ask him to come to see me. Please answer this in the next paper. What do you think of my troubles?

I am nice looking. I am tall and I dress as well as other girls and why can't I have a beau? When I left his home I did say: "I invite you all to come to see us," and when I said "all" I looked right at this fellow. Now don't put this in the waste basket until you answer my troubles. I am worried because I am afraid I will be an old maid. My father owns a nice farm. We have everything we need, although we are not rich.—Anxious Girl.

Aunt Hanna's Reply: As it appears to me, like many other girls you are too reserved and shy, lacking in demonstration or exhibition of your feelings. You are inclined to stifle your emotions rather than to give them expression, all of which is desirable but should not be carried to extremes.

Let us consider for a moment the attractive widow, the woman who in most instances attracts the attention of men. It is conceded that a young widow of this kind, or possibly the average kind, may enter a parlor and at once attract the gentlemen to the detriment of the unmarried girls present. I mean by this that the young widow, knowing more of men and having a better understanding of herself, gives freer expression to her personality, and I might almost say to her sexuality, so that the men are simply entranced. Why is this so? Why are these gentlemen thus attracted?

The answer is, first, for the reason that this young widow is so different in her manner and expression from those of her unmarried sisters. She is eminently original, she has a hearty laugh which she exercises frequently. She is a good listener and has appreciation for jokes and good stories. She is also a good talker, but is careful not to overdo this part of her program. This widow is diplomatic. I can see that you are not at all diplomatic, while diplomacy is one of the great things of the world. Diplomacy exalts or debases nations and marks the rise and fall of empires. A person utterly devoid of diplomacy is constantly committing acts that he or she will sooner or later deplore. We should study diplomacy from early life onward until the end.

In no department of life is diplomacy more successful than in love affairs of men and women, of boys and girls. Diplomacy teaches how far we may go and when to stop, what to say, what to think, but what not to put into verbal language, when to arrive and when to depart, when to forget and when to remember. Hundreds of thousands of young girls have lost their chance of marriage by lack of diplomacy. It is well enough to be shy, but it is a sad mistake to be excessively shy. It is a good thing to be able to talk, but diplomacy should indicate when we should stop talking. We should give our friends encouragement, whether the affair is serious or not, but we should not be too bold or too encouraging. Your fault evidently is in excessive timidity. There is no reason why a girl should not let a young man know that she likes him and is pleased with his acquaintance, but there are many reasons why she should not chase after him.

My advice is that you accept the first opportunity to encourage this young man in his attentions. If he is at church or at an evening party, or if you meet him on the street, approach him cheerfully, joyously, as though you were glad to see him. I might add here, "Be careful not to overdo it," but I do not think you are a girl at all inclined to overdoing or being excessively expressive of your feelings.

I conclude that the young man in question is excessively shy. When both the boy and the girl are shy, the party giving advice suffers difficulties in bringing the two together. The old saying is, "Faint heart ne'er won fair lady," but the saying is equally true that "A faint heart seldom wins a bashful beau." My advice, in general to young people is that they do not hold themselves in too much restraint. We all appreciate the attractiveness of children. Why is it so? The answer is we love them because they are under no restraint. They simply act natural and act out their characters freely, and this is precisely what young people in society do not do. They try to act unnatural and are continually under restraint.



In the above cut our artist represents the apple barrel approaching the American home. It cannot be said that the apple barrel has reached the American home for there are hundreds of thousands of homes in this country in which a barrel of apples has never entered. A barrel of apples means much. Think it over. This handsome fruit will save doctor's bills and will furnish delightful changes in the menu of the home dining room both morning, noon and night. A plate of bright, beautiful apples upon the table is almost as attractive as a bouquet of flowers and the fragrance of the apples reminds one of the fragrance of flowers. When all the people of the United States have learned to eat apples and have learned of the economic value of apples as daily food there cannot be too many apples grown in this country.

## WINTER ORCHARD WORK

## Reasons Why This Is the Best Season for Orchard Improvement

Many of us have fallen into an old rut regarding work about the orchard, appearing to think that the only season for it is in early spring, when the truth is, it can be done just a little better during the late fall or winter, says The Indiana Farmer. There really are some decided drawbacks to early spring improvements in the orchard, and some advantages in doing the work at this time. We are usually rushed with important field work in early spring, which results in one of two things—the orchard is entirely neglected or receives only a part of the attention it should receive; or else the field work is neglected in order that the orchard may be given proper attention. Many times this rush field work is done first; then a hurry job of improvement is done in the orchard. The result is inefficient work, and very often it throws one so late in doing it that the sap begins to rise before the job is completed, which is a serious setback to the fruit trees, the

"bleeding" impairing their growth and development.

On the other hand, late fall and winter improvement in the orchard can be done at a time when the farmer has practically nothing that will demand his close attention. The season's growth of wood in the orchard is thoroughly ripened at this season, the sap gone down, and there is not the least danger of injuring the trees by pruning. It is not advisable, however, to expose the fresh wounds of pruned branches by doing this work on bitter-cold days; it should be done only during bright, sunny weather.

## WINTER PRUNING

In pruning, we do not recommend that the discarded branches be piled and burned to get rid of them. Use the large limbs for fire-wood, and all the smaller trimmings for filling in destructive washes about the farm, and the long, straight limbs make good poles for beans and peas. Pruned branches should be removed from the orchard as soon as taken from the trees, as they are a nuisance if left on the ground, the grass growing over them the following season, and making it difficult to remove them. The fresh wounds on fruit-trees, where large limbs are removed, should be given a good coating of paint, to prevent suncracking and freezing of the newly exposed interior of the wood.

A saw for pruning is preferable to an ax in all instances where the limbs are heavy, as the job can be done much neater with the saw, which should of course be keen and in good shape. With an ax, one is apt to peel the bark from the trees in various spots, splinter up the wood, and very often cut off small branches not intended to be pruned. It is harder and more awkward work, anyway, with an ax, and one is likely to cut himself in the operation. Pruning shears are best adapted to snipping off the twigs and smaller branches, and if firmly fastened to long handles, will prove much more convenient in removing those parts higher up in the trees.

Not only should all dead branches be removed from the orchard trees, but all blighted, withering, diseased or decaying limbs should be cut well back, to prevent farther spreading of any disease or decay. Where a goodly portion of the tree already is withered or dead, it should be promptly cut down and hauled from the orchard. In this way, the spread of some dangerous tree disease may be checked and a large part of the orchard thus saved from it. All water-sprouts—that is, all switch-like limbs that run almost straight up from a horizontal branch—should be removed, as their position is not correct, and they will produce no fruit for years. Limbs that are so long they would not support a heavy crop of fruit well, should be clipped back. As a general rule, the comparatively low, spreading tree is the ideal one for bearing fruit. Keep the tall, spindling trees cut back, which will make the fruit easier to pick, enhance it in point of quality, cause a heavier production, and prevent the tree from rearing up into the air to be broken perhaps by the wind.

All small fruit-plants and bushes should be carefully covered with old straw or hay, to protect them from the severe freezing. Bend such bushes gently over to the ground, place some straw over them and weight them down with light poles, boards, manure, or dirt if it is not frozen too hard. This protection can be removed when spring comes, and then utilized to a good advantage as a mulch, thus keeping down the weeds and enriching the soil for fruit production. The strawberry bed, especially, will require a mulching of old hay or straw, to prevent the plants from freezing out. When spring opens up, this mulch will conserve the moisture, fertilize the soil, and make the picking of the fruit much more agreeable and pleasant, as well as keeping the fruit free from dirt. Plants should be mulched with manure, rotted hay, straw and refuse corn-stalks, piling such material around the base of the trees. By the following spring this material will be worked down and scattered about till their fertilizing effect will be felt even to the extreme points of the roots.

## Rural Inference

Farmer Schoss—Well, there's another lute'ry guy bought a farm back here and gone to raising chickens. He's got over a thousand or 'em!

Farmer Hardecabable—Gosh! He must be a good writer to support so many hens as that!—Puck.

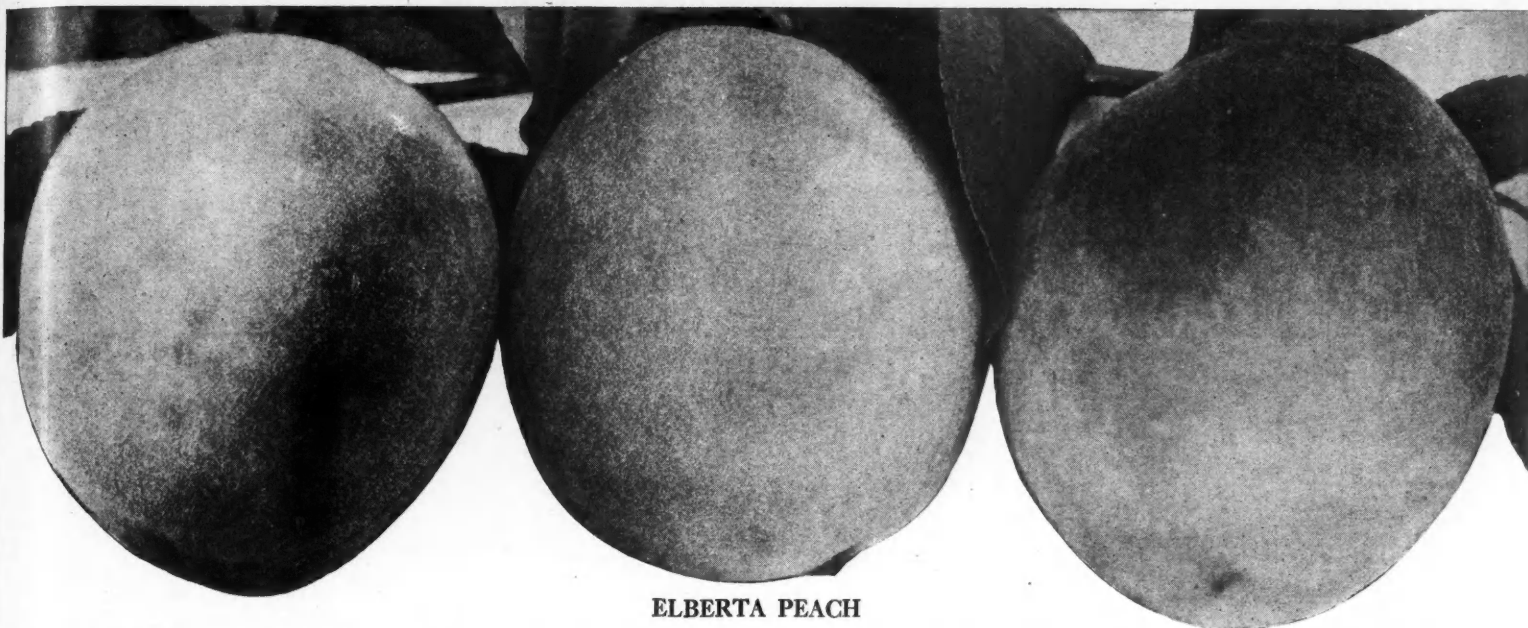
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### NINETY-THREE TREES PAID FOR FARM IN TWO YEARS

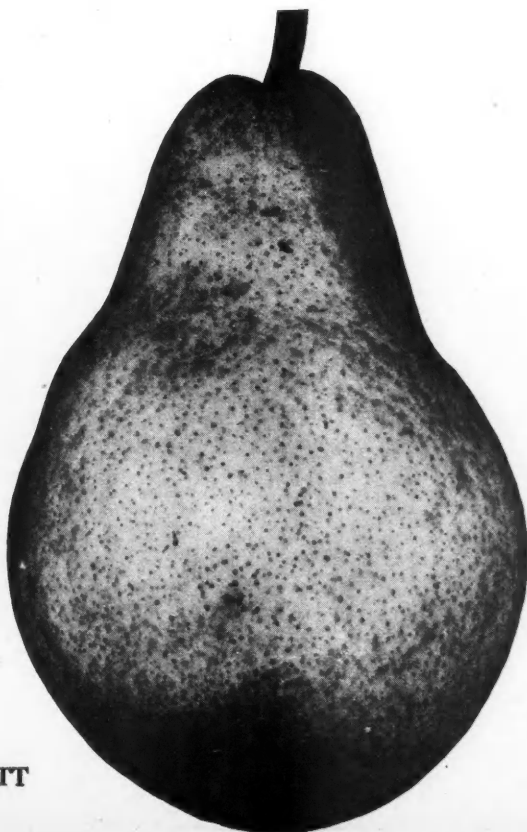
A ten acre farm in Wayne Co., N. Y., after standing idle for years was bought for \$1,000.00. The new owner believed in thorough cultivation, spraying and pruning and began work on the orchard at once. A second year later the fruit from the 93 trees in the orchard sold for \$500.00, or one-half the cost of the entire farm. At the distance these trees were set apart it would require 135 to cover an acre, which makes the income per acre approximately \$750.00. Two-thirds of an acre of pears on this ten-acre farm in two years paid for the entire ten acres.

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BARTLETT



PEARS



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